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Original Articles.

OSTEITIS FIBROSA.

BY CHARLES F. PAINTER, M.D., BOSTON.

CITATIONS of this condition are not so common that the report of a single case is needless. In this particular instance an added interest attaches because of the repetition of the lesion in a part of the skeleton not in the first instance affected.

In September, 1907, A. S., aged 18 years, came to the Orthopedic Clinic of the Carney Hospital with the following clinical history and symptoms: He was a drug clerk by occupation; always been well, and in his own and his family's history no chronic sickness of any consequence had ever occurred. Twelve years ago, when he was about six years of age, he fractured the right thigh. He was climbing a fence and fell, striking heavily upon his knee. The leg felt uncomfortable from that time until three years later (1904), when he again fractured the thigh, this time by simply twisting the foot while alighting from an electric car. As a result of this accident he was confined to his bed for ten weeks and was on crutches for two months. Recovery seemed perfect and he had no trouble until the latter part of July, 1907, while he was on a vacation. At this time he commenced to have pain below the trochanter. He injured the thigh after

this, several times slightly, and noticed some swelling in the region of the trochanter.

He entered the hospital September 8, 1907. The patient was a fairly developed and nourished young man, of fair color. Examination of the chest was negative as to both heart and lungs. Urine showed no abnormality. The joints of the skeleton all seemed normal, including the spine. About 8 to 10 cm. below the right great trochanter was a hard, firm tumor, a part of the bone apparently, irregular in outline, simulating a callus. On account of the possibility of there being a neoplasm and because the x-ray showed an appearance not inconsistent with such a view, it was decided to explore the femur. In the picture the abnormal osseous thickening extended from the neck of the femur downward for 12 to 14 cm. below the trochanter. In this there seemed to be three or four pear shaped areas in which the bone was less dense in appearance, very similar to that noted in cysts.

On September 9, 1907, an incision was made 12 cm. in length, over the outer side of the femur, with the tip of the trochanter as the top of the incision. After incising the periosteum, which seemed in no way abnormal, a trough was made through the cortical bone, which was about 1.5 cm. in thickness. The medullary cavity was occupied by a dense, yellowish, homogeneous tissue, which was not at all vascular and could be easily peeled off, leaving hard, smooth, normal appearing bone beneath. This tissue seemed to be arranged in four groups or

cavities, each about 4 x 2.5 cm. The uppermost one extended well into the neck of the femur. These were thoroughly cleaned out with a curette down to hard cortical bone. There was no suggestion of a lining to the cavities.

There was considerable oozing for a day or so after the operation, but by the 17th of September the wound had nearly healed. There was no fever. For two or three weeks there was a bloody discharge from the upper angle of the wound. A plaster spica was applied to guard against fracturing the weakened bone. On October 1 he was discharged to his home. He wore the spica and used crutches for about four months, when all protection was removed and he returned to his work as a drug clerk. He was all right until the winter of 1912, when he commenced to have pain in the right lower leg at about the juncture of the upper and middle thirds of the right tibia. He had noticed that when walking, especially up hill, that he had the most trouble. His general condition does not seem to have been affected. There had been no injury. When he came to the hospital the second time he was using a crutch and dragged the right leg behind him.

On physical examination at this time the leg was somewhat swollen from the tibial tubercle downward nearly to the ankle. There was some increase in surface temperature and considerable tenderness, especially at one point about 6.7 cm. below the tibial tubercle, where there seemed to be a slightly elevated spot considerably more tender and congested than any other portion of the leg. There was also more heat appreciable in this place than elsewhere. There was no fluctuation. Percussion over the bone gave a more hollow sound than is generally noticed in percussing bone.

Under ether, on May 11, an incision was made 12 cm. in length along the crest of the tibia. Percussion with a heavy instrument directly on the bone after the skin had been retracted gave rise to the same hollow percussion note that was noticed before. On cutting through the cortex, which was only about an eighth of an inch in thickness, the outer shell of bone could be easily separated from the medullary bone beneath. A trough about 2 cm. in width and 15 cm. in length was cut down the front of the tibia. The cortical bone was soft and could easily be removed with the curette, the sensation obtained through the curette being that of cutting a sponge. The color of the bone varied from very light yellow to a dirty white. It was not very vascular. At the very top and bottom of the incision in the bone there seemed to be an expansion of the cavity occupied by the above described material, and in these localities the bony substance was dead white in color and of the same consistency as the rest of the medullary cavity. There

were no cystic cavities and there was no infiltration with anything suggesting a new growth. This material was removed down to hard cortical bone with a curette. The cavity was wiped out with Harrington's solution, followed by strong alcohol. A seton was left in; the periosteum, which was not thickened or adherent, was closed over the trough in the tibia with continuous catgut sutures, and the fascia united with a row of continuous catgut, the skin with silk worm gut. Operation was done under a tourniquet, which was not removed until the dressing was in place, the object being to permit the cavities to fill with blood, it being hoped that the clot would thus organize. On May 18, the stitches were removed, the wound was clean, and on May 25 the patient was discharged. The small opening where the seton was inserted had not fully closed and there was a very slight bloody discharge.

August 1—Wound was entirely healed. Patient has been using crutches up to the present time, but now is to abandon them.

December 1—Has been getting about without any artificial support, walking freely, engaged in his customary occupation. No symptoms subjective or objective in the leg. It is a matter of regret that no pathological report can be found for either of these operations though at the time material was sent to the laboratory.

This case is unique, as far as my own experience is concerned, in that two foci developed in the same individual, separated by long intervals of time, and without any determinable etiologic factor, certainly in the second one. It would seem that some infective agent was operative in this case. If this is so, why it should show a predilection for the medullary bone and produce changes which are so different from those which we commonly associate with bacillary processes does not yet appear. It would seem that if the infective theory is adopted it would be necessary to suppose that the organism responsible was a very unusual one or, on the other hand, that it was a common one whose virulence had been in some way so attenuated that it was not capable of setting in motion those tissue reactions which are commonly induced when the unattenuated organism comes in contact with bone. In the review of the literature which follows it will be noted that there are all sorts of reasons assigned for the lesion. No one man apparently sees enough cases to be in a position to make a thorough study of the subject in all the different phases in which it may present itself, for it is probable that the early stages of the benign bone cyst is represented by the condition which has been described in the case above cited. It is also natural to seek to associate trauma as a causative factor, apparently particularly so in bony lesions, but it is impossible to prove in this

case, for example, that it had anything to do with the second focus which was separated by four years, in point of time, from the development of the first one, with which there was an associated, severe trauma.

In the citations of the cases which now follow there is no pretense that the entire literature is reviewed. Many case reports which are omitted seemed not to contribute anything new to our knowledge of the subject. Enough have been recorded, I believe, however, to indicate the more generally held beliefs with reference to the etiology, but it must be conceded that no hypothesis has been proven for any of them and it seems unlikely that such will be the case until opportunity is offered to follow enough patients through from the very beginning.

LITERATURE.

Bloodgood has studied this subject thoroughly, and his articles in the *Annals of Surgery*, for 1910, Vol. LII, 145, has covered the world's literature on the subject down to 1907, very completely.

From his own experience and as a result of his studies of the literature, he concludes that bone cysts may be divided into two classes, those that are caused by osteitis fibrosa and those not so caused. They usually are noted before the age of twenty, and continue from six months to nine years. A fracture is the most common initial symptom and takes place through the walls of the unrecognized cyst. He regards osteitis fibrosa as primarily an inflammatory condition, the medullary tissue being replaced by connective tissue in which cysts may or may not form. In the treatment of the condition he cures and wipes out the cavity with carbolic and alcohol or Harrington's solution.

Konjetzny (abstracted in *Am. Jour. Ortho. Surg.*, VIII, No. 1, 221).

Author reports on a tumor of the external malleolus described by Anschutz. The tumor was surrounded by a thick capsule but showed no destructive invasion of surrounding tissues. On section, red-brown foci of coagulated blood or cysts were noted. Pigment accumulations had giant cells in close relation. Numbers of spindle cells arranged in an orderly fashion without polymorphism, which Lubareck claims is always present in giant celled sarcomata. He compares the formation of these bone cysts to traumatic brain cysts and the author regards them as a pathological disturbance of the repair process in a fracture. He thinks these are not properly described as sarcomata and disagrees with Alberini's theory of a blastomycotic pathogenesis. If this is a true case of osteitis fibrosa it evidently represents a little different

stage in its development than is commonly met. From a pathological standpoint, however, it may very well represent a transitional stage.

L. Rehn. (Festschrift) *Beit. zur klin. Chir.*, 1911. Abstract by Colvin in *Am. Jour. Orth. Surg.*, August, 1912.

Hamberlin, reporting the study of one case, thinks that osteitis fibrosa is a circumscribed, endosteal, fibrogenous osteomatoses or an osteoplastic metaplasia of the endosteum, with secondary fibrosis of the medulla plus giant-cell collections and degenerations of connective tissue secondary to these. It is conceivable that a low grade infection might result in a metaplastic proliferation of endosteal bone leading to the kind of tissue changes which are described by different observers and ultimately end up with cystic degeneration, thinning of the cortex and spontaneous fracture.

Chronic Deforming Fibrous Osteitis. Abstract by Colvin in *Am. Jour. Orth. Surg.*, August, 1912. *Beiträge zur klin. Chir.*, 1911, LXXV, No. 8.

Analysis of a case leading to the conclusion that it was one of osteitis deformans, to be classed somewhere between Paget's and von Recklinghausen's types. It commenced in youth, came to a standstill, but left the characteristic bone changes.

There are a number of pathological bone lesions, having some features in common which resemble the variations of this lesion of fibrous osteitis for the solution of which the future holds the key. For example, it would seem quite as reasonable to look for the establishment of a relationship between adolescent rickets and osteomalacia, between the sarcomata and some types of osteitis deformans as it is between benign bone cysts and osteitis fibrosa. The "missing" link is always difficult to find.

K. Hartman. *Beiträge zur klin. Chir.*, LXXIII, No. 3, 1911.

Report of two cases with radiographs and pathological findings and a discussion of the literature.

Maucalre and Burnier. From abstract in *Am. Jour. Ortho. Surg.*, No. 1, x, 159.

Regard trauma as the most frequent cause. Cysts are more frequent in long bones. Clinical signs—swelling, pain and fracture. Fractures generally unite readily. Differentiate from sarcoma, round and giant-cell; from Paget's; osteomalacia; osteomyelitis. Their treatment seems unnecessarily complicated in view of Bloodgood's results.

Anschütz. Abstract in. *Am. Ortho. Surg.*, viii, No. 1, 220.

Condition is of long duration and remains latent for great lengths. Most of the patients are young. Trauma seems to play an important etiologic rôle. There is nothing to be gained from separating the juvenile and adult types. In the juvenile cases cartilaginous islands have frequently been seen. Reports six cases. In a 36-year-old man a large tumor of the external malleolus appeared after a Pott's fracture. On excision it proved to be an early stage of osteitis fibrosa.

Whitman's and Kammerer's cases both seem unquestionably to have been instances of bone cysts developing in consequence of osteitis fibrosa. They were both, clinically, entirely analogous to my own case. Whitman's did not then come to operation. Kammerer's did, and from the pathological findings it would seem that a diagnosis of osteitis fibrosa was entirely justified. Whitman diagnosed his case as a cyst or as a mild form of osteomyelitis.

Curtis reports a cyst of the tibia in an 18-year-old boy. History of fracture of leg in early life. Pneumonia at 12 and right after that pain in head of right tibia more or less troublesome, but intermittent, with increasing severity, finally before entering hospital he was in bed a year. At operation, periosteum was not thickened. Cavity in bone with thin walls, size of hen's egg; contained thin layer of granulations on the walls and a little serum. Anterior wall of cavity was cleared away; bone was extra dense. Cavity filled with bone chips later and sinus finally healed, and now has a perfect result. Granulations from cysts were merely granulation tissue according to the pathologist.

Curtis remarks that Virchow has stated that most cysts result from degenerations of solid tumors. Curtis found only two cases on record at the time of his paper like his own. They were the cases of Sonnenberg (*Deutsche Ztschr. f. Chir.*, 1879, xii, 314) and Schlange (*Arch. f. klin. Chir.*, 1887, xxxvi, 117). These were both of traumatic origin in young adolescents (twelve to fourteen years), and had no recurrence at least for months after operation. Von Recklinghausen examined the specimens and found no malignancy. Schlange suggests that they originate in mild osteomyelitis similar to abscesses described by Nicotise (*Rev. de Chir.*, June, 1892, p. 512) and called serous abscesses.

An Addition to the Knowledge of Fibrous Osteitis with Extensive Cyst Formation. Fujii. *Deutsche Ztschr. f. Chir.*, cxiv, 1-3, p. 25. Abstractor, Spitzer, Manhold. *Zentralbl. f. Chir. u. Mech. Ortho.*, 1912, vi, 8, p. 320.

Fibrous osteitis is a chronic disease of inflammatory character occurring in multiple

form; it is absolutely different from osteomalacia, and independent of it. Symptoms of osteomalacia may be added in the course of the osteitis. The anatomical changes consist in a fibrous condition of the marrow, breaking down of the old bone, and growth of the new. Cyst formation is frequent and by reason of the changes of the bones the skeleton loses the power of resistance.

G. A. Wollenberg. *Sonderdruck aus der Therapeutische Rundschau*, 1908, No. 52.

Wollenberg calls attention to the formation of cysts in the long bones of the young and their liability to spontaneous fracture, and cites Mickulicz term for them, viz., osteodystrophia cystica, to distinguish them from the parasitic cysts and those occurring in the course of Paget's disease. He reports one case in a boy 6½ years, upon whom he operated, with a good result. He also calls attention to the fact that many of these cases recover spontaneously.

On the Question of Bone Cysts and v. Recklinghausen's Fibrous Osteitis. Hans v. Haber. *Archiv f. klin. Chir.*, LXXXII, 3. Abstracted by J. Riedinger. *Arch. f. Ortho., Mech. u. Unfallchir.*, 1908, vi, 2-3, p. 255.

The question whether v. Recklinghausen's bone affection can be found in combination with giant cell sarcoma could be answered in the affirmative by the author with a probability approximating rarity. The diagnosis is supported by repeated clinical observations of a case, already described by him (1904) and by anatomico-histological investigation. He reports on three more clinical cases besides. Since this malady still finds very different critique in literature, the author discusses it more closely from a critical standpoint. His conclusions are:

1. v. Recklinghausen's fibrous osteitis is a peculiar form of osteomalacia with transformation of fibrous marrow into fibre marrow and formation of tumors, which, however, do not necessarily form an integral part of the clinical picture. The affection is not restricted to any definite age.

2. The giant cell sarcoma observed in fibrous osteitis must be conceived as genuine giant cell sarcoma, at least for the present, and there is no justification for calling them inflammatory new growths, although they seem to occupy a peculiar position in the classification of tumors.

3. The course of the disease can be designated as benign only in so far as it extends over many years, but many cases of fibrous osteitis with tumor formation have, up to now, terminated fatally after all. Cases without tumor formation and the cases of isolated affections of a part of the skeleton, are possibly curable.

4. It has been proved that fibrous osteitis does not always affect the whole bone system, but can also be observed in single skeletal parts.

5. In cases of a localized affection the best therapy is conservative-surgical; in most of the affections of the skeleton *in toto*, purely symptomatic.

6. As a matter of fact far more classes of bone cysts may belong to v. Recklinghausen's clinical picture than opinion, up to the present time, has accepted.

In this work a case described by Tietze is identified with one described by Bockenheimer. The author learned later that the cases are not identical and asks correction to be made in the referat. The error was due to the literature, an assumption being suggested by the clinical history, that the case came under treatment first in Breslau and later in Berlin.

On Fibrous Osteitis and on the Genesis and Therapy of Bone Cysts. Pfeiffer. *Beiträge z. klin. Chir.*, 1907, 53, 2. Referat by Wette: *Ztschr. f. Orth. Chir.*, 1907, xviii, 1-2, p. 251.

By reporting four new cases of fibrous osteitis investigated histologically, radiographically, and bacteriologically, Pfeiffer seeks to demonstrate that the circumscribed bone cysts observed in them are nothing else but softening centres of inflammatory new formations in bone marrow. The sarcoma-like formations frequently found in the walls of the cysts are not genuine tumors, but benign inflammatory products of the bone marrow, representing a different stage of one and the same disease process. The therapy of bone cysts consists of chiselling and scraping out. The cavities are then filled up by new healthy bone tissue. Prognosis is good for circumscribed forms.

Bone Cysts and Fibrous Osteitis. Jenckel. *Zentralbl. f. Chir.*, 1912, No. 11. Referat: Blencke. *Zeitschrift f. Ortho. Chir.*, 1912, xxx, 3-4, p. 623.

With the help of eight cases of localized fibrous osteitis with cyst formation, Jenckel discusses most extensively the change which opinions have undergone about the origin of bone cysts not rarely found even in the tumor-like early stage of fibrous osteitis, and which must be considered products of softening or breaking down. Hemorrhages, especially, cause cavity formations. Jenckel stands absolutely by v. Recklinghausen's view, that myelogenous, so-called, "schalige" (?) squamous (?) sarcomata are nothing else than variations of fibrous osteitis, which by incision and curetting can be brought to a cure, and sometimes even heal spontaneously. Clinical symptoms, macroscopic condition, and histological structure characterized the first four cases as squamous sarcomata of the bone, which we know must be differentiated from the real sarcomatous

neoplasms because of their relatively benign nature, and be considered a product of the fibrous metaplasia of the bone marrow. The designation of fibrous osteitis is poorly chosen, since any actual inflammation is out of the question. It might be better to use the term "fibrous ostosis." These tumors frequently developing in consequence of injuries, cannot be thought of as genuine neoplasms, but rather as a stage of the metaplasia of the bone marrow. In the great majority of cases, incision, chiselling, and curetting is sufficient.

A Case of Atypical Osteitis Deformans. On the Clinical Forms of Chronic Deforming Fibrous Osteitis. W. Klestadt. *Beitr. z. klin. Chir.*, LXXV, 3. Referat: *Baisch. Zentralbl. f. Chir. u. Mech. Ortho.*, 1912, vi, 1, p. 19.

The case observed and described by the author was that of a deforming osteitis of the lower extremities, which had developed slowly and intermittently from the fourteenth year of life. Anatomico-pathologically and clinically it corresponded neither to the type of v. Recklinghausen's disease nor to that of Paget's disease with accuracy, standing closer, however, to the former because of the typical pictures of the fibrous osteitis with cavity formations in the long bones, and secondly because of the multiple fractures and its onset in youth. Characteristic for Paget's form of osteitis is the hypertrophy of the skull. Author, therefore, is inclined not to consider his case a mixed form of both diseases, but to assume in harmony with other authors, and especially after v. Recklinghausen's latest explanations, a common cause of disease, possibly v. Recklinghausen's malacia, which can find expression in most various forms.

Fibrous Osteitis in Childhood. P. Frangenheim. *Beitr. z. klin. Chir.*, 76, 1. Referat: *Baisch. Zentralbl. f. Chir. u. Mech. Ortho.*, 1912, vi, 2, p. 66.

Fibrous osteitis has till now only rarely been observed in childhood, i.e., in the first ten years of life, yet the beginnings of the disease occurring in later years frequently reach back into childhood. The disease at this age, therefore, does not present any special form of the malady. All non-parasitic cysts of the long bones are to be considered as original fibrous osteitis in the author's opinion. The following three features in a Roentgen picture should point to the diagnosis of fibrous osteitis:—the picture presenting a sharply outlined cavity, the cortex showing perfect regularity and the cavity itself being absolutely transparent. If the fibrous osteitis occurs in the form of an extensive fibrosis of the marrow without any considerable cyst formation, the author recommends a more radical attack in the operation, since he once saw a recurrence after

careful and thorough curetting of such a fibrous osteitis.

Fibrous Osteitis. (Read at a medical meeting in Hamburg, October 22, 1912.) Patschke. *Munch. Med. Woch.*, 1912, No. 45. Referat: Schareff. *Ztschr. f. Ortho. Chir.*, XXXI, 1-2, p. 265.

Patschke discusses four cases. In two patients who were presented the disease was situated in the pelvis, in the third in the humerus, and in the fourth in the knee. Three cases healed spontaneously, the fourth was operated on. A cavity was opened in the iliac body larger than a fist and filled with crumbly masses. These were carefully removed with a sharp curette and the wound closed again. A complete cure resulted.

Casusistic of Bone Cysts in Fibrous Osteitis. (Dissertation, Giessen, 1909). Decken. Referat: Blencke. *Ztschr. f. Ortho. Chir.*, XXIV, 3-4, p. 569.

Decken reports two observations of his own concerning cases of solitary bone cysts examined in the pathological institute at Giessen. The cysts were located in the fibula in one case and at the lower humeral end in the other. Both cases described showed cyst formations in the long bones, causing deformation of the same. Microscopical examination of the wall of the cyst determined, in both cases, that they were not genuine cysts with endo- and epithelial lining, that the cavities rather must be considered products of tissue loss; furthermore, that there had taken place a metamorphosis of the normal marrow tissue within the area of the process tending to the formation of the cysts into connective tissue, partly fibrous, partly cellular, and that there was demonstrable in the diseased bony parts, beside a lively reabsorption which had led to the total disappearance of the cortical layer, a structural change of young trabeculae, mostly osteoid and rich in Charpey's fibres. Decken considers this sufficient justification for designating the surrounding processes as localized osteitis fibrosa.

This group of references represents, for what reason I am unable to state, a more thorough study of the subject than seems to have been devoted to it in the second group of references to be cited later. Possibly it is because the observers were recording their own observations and philosophizing about their results a little more nearly under the influence, chronologically, of the master observer in such matters, von Recklinghausen. Comparison of the lesions denominated osteitis fibrosa with certain stages of the degenerative (cystic) changes observed in osteomalacia and Paget's disease on the one hand, and the type of tumor formation known as giant celled sarcoma and the cystic or cavity formations observed

in certain types of osteomyelitis on the other, are variously suggested and furnish food for thought. Degenerations, rarefactions, proliferations are so common to various seemingly unassociated pathological processes which are supposed to have entirely distinct etiologic causes that one finds it extremely difficult to evaluate these processes as they occur in the course of the progress of a given case or series of cases.

As has been intimated above, the literature from 1912 on to the present time (1921) is not particularly instructive, consisting more especially of case reports of no very particular value so far as they throw new light upon the problem of etiology or heretofore undescribed phenomena connected with the clinical history or course of these lesions, their pathology or the method of their treatment.

Osteitis Fibrosa. Patschke. *Deutsch. Med. Woch.*, 1912, XXVIII, 2434.

The author reports two cases without deriving any conclusions.

The So-called Benign Cysts of Bones. Silver. *Am. Jour. Orth. Surg.*, 1911-12, IX, 563.

The author reports a case and reviews the literature on solitary cysts of bone. For a theory regarding the cause of cysts he mentions osteitis fibrosa in which he says "trauma undoubtedly plays a part."

Syphilis in the Etiology of Fibrous Osteitis. Skillun. *Am. Jour. Med. Sci.*, 1913, CXLVI, 531-535.

Basing his opinion on one case very carefully examined by laboratory and radiographic means, he establishes a premise from which he concludes that this, if not many other similar cases, is due to syphilis of the late hereditary type, that is, an inflammatory process. He reports production of bone in this case, however, contrary to the findings of other men who have studied similar cases.

Osteitis Fibrosa. Seirlin. *Deutsch. Zeit. f. Chir.*, 1914, CXXX, 85-117.

Reviews the literature and favors a metaplasia related to osteogenesis imperfecta. Reports two cases and recommends simple operative procedure.

Osteitis Fibrosa Cystica. Landon. *Am. Surg.*, 1914, LX, 570-582.

By the examination of three cases which he had the opportunity to study and from a review of the literature on this subject, he believes this process to be a metaplasia which is the underlying or primary stage of cystic disease in the developmental stage of bone. He favors trauma as a cause and finds that pain is uncommon unless accompanied by some concomitant disease such as syphilis. He claims

that no proliferation ever exists in these cases and that curettage and primary closure are usually enough.

Osteitis Fibrosa Cystica. *Wis. Med. Jour.*, 1914-1915, xiii, 91-95, Smith.

Smith cites one case and believes this to be an inflammatory process. He puts marked emphasis on simple procedures in operative treatment.

Osteitis Fibrosa with Report of a Case. *Jour. Mich. Med. Soc.*, 1915, xiv, 46-48. Van Zurhewenburgh.

He cites the radiograms of one case and proposes as a differential diagnosis:

1. From inflammation by absence of secondary reaction in neighboring parts.
2. From rickets by absence of characteristic changes in the epiphyses.
3. From metastatic carcinomata by absence of striations.
4. From sarcomata by multiplicity and tendency to rupture through thin bone, and presence of spicules radiating from point of primary growth.

He emphasizes the fact that in spontaneous fractures the repair is rapid if the cyst is not removed. Curettage should be done later.

Osteitis Fibrosa. Ballawa. *Med. Rec.*, 1915, LXXXVII, 539.

By presenting one case he endeavors to prove that these cases are metaplasias closely allied to osteitis deformans, osteomalacia, and rickets. He rather favors this as a secondary process in tuberculosis, particularly in the polycystic type. In the discussion, calcium therapy was urged but the author had used the same without results.

Osteochondrofibroma, or Osteitis Fibrosa. Gibney. *Med. Rec.*, 1916, LXXXIX, 1037.

Reports a case which he finally admits is probably osteochondrofibroma rather than osteitis fibrosa.

Case of Osteitis Fibrosa Cysticus. Ramey. *Tex. State Jour. of Med.*, 1918, xiv, 16.

He reports a case involving the right femur and tibia in the diagnosis of which he differentiates from other conditions by stating that it rarely extends beyond the periosteum, is always confined to the shaft of the bone and never involves the epiphysis. He offers no theory as to the cause.

Fibrous Osteitis. *Internatl. Clinics*, 1918, 285, ii, 74-79.

Two forms should be made, generalized and localized, both of traumatic origin. Further knowledge not possessed.

Osteitis Fibrosa. De Conny. *Jour. Am. Med. Assn.*, 1919, LXXII, 1612.

Reports a case the symptoms of which dated from a period shortly after a severe vaccination, therefore favoring infection as a cause. In this case the humerus was resected.

SUMMARY

The two theories, out of several that have been advocated by the individuals discussing these lesions, which seem most worthy of consideration because of their agreement with fundamental pathological processes, is the theory of (a) low grade inflammation and that of (b) endogenous metaplasia. It does not seem to me that trauma can be cited as playing a rôle which is causative, and as for syphilis, osteomyelitis, osteogenesis imperfecta, tuberculosis, Paget's disease, osteomalacia, giant celled sarcoma, or any other of the diseases cited having any close relation to the lesions of osteitis fibrosa, it does not appear that there is any convincing evidence.¹ Simple, free exposure of the lesion and curettage to solid bone offers a satisfactory solution of the problem of treatment.

BIBLIOGRAPHY.

- 1 Mandair: Osteitis Rarefacti Metatraumica. *Prog. Med.* Paris, 1913, 3 s., xxix, 86.
- 2 Panchka: Osteitis Fibrosa. *Deutsch. Med. Woch.*, Leipzig, 1912, xxviii, 2404.
- 3 Sklern, P. G.: Syphilis in the Etiology of Fibrous Ostitis (Abstract in *Proc. Path. Soc. Phila.*, 1914). *Am. Jour. Med. Sci.*, Phila., 1914, cxlii, 531-535.
- 4 Landon, L. H.: Osteitis Fibrosa Cystica. *Am. Surg.*, Phila., 1914, ix, 570-582.
- 5 Smith, J. F.: Osteitis Fibrosa Cystica. *Wisconsin Med. Jour.*, Milwaukee, 1914, xiii, 91-95.
- 6 Stierlin, E.: Osteitis Fibrosa bei angeboren Fractur. *Deutsch. Zeit. für Chir.*, Leipzig, 1914, cxxx, 83-117.
- 7 Von Zurhewenburgh, J.: Osteitis Fibrosa with Report of a Case. *J. Mich. Med. Soc.*, Grand Rapids, 1915, xiv, 46-48.
- 8 Ballawa, J. G. M.: Osteitis Fibrosa. *Med. Rec.*, N. Y., 1915, lxxvii, 539.
- 9 Lutsch, F.: Übergeneralisierte Osteitis Fibrosa mit Tumoren und Cysten. *Arch. für klin. Chir.*, Berlin, 1915, cvii, 1-137, 6 plates.
- 10 Gibney, V. P.: Osteo-chondro-Fibroma or Osteitis Fibrosa. *Med. Record*, N. Y., 1916, lxxxix, 1037.
- 11 Hanen: A Case of Von Recklinghausen's Disease in a Polish Journal.
- 12 Wilsen, A.: A Case of Osteitis Fibrosa. *Kristiania Kir. for farh.*, 1916, 120-122.
- 13 Trell, A.: A Case of Osteitis Fibrosa and Fracture of the Humerus—Operative Treatment. *Hygeia*, Stockholm, 1916, lxxvii, 1375-1383.
- 14 Lewis, D.: Fibrous Ostitis. *Internat. Clin.*, Phila., 1918, 28 s. ii, 74-79, plates.
- 15 Raney, R. L.: Report of Cases of Osteitis Fibrosa Cystica Involving the Shaft of Right Femur and Right Tibia. *Texas State Journal of Med.*, 1918, xiv, 16.
- 16 De Coucy, J. L.: Osteitis Fibrosa. *J. Am. Med. Assn.*, Chicago, 1919, lxxii, 1612.
- 17 Kjargaard, and Langskjold: Report cases in Norwegian Journal, the first with autopsy.
- 18 Martin, B.: Ein Fall von generalisierter Osteitis Fibrosa. *Berlin. Wch.*, 1919, lvi, 355; also *Deutsch. med. Woch.*, Leipzig, 1919, xiv, 423.
- 19 Ringel: Osteitis Fibrosa nahezu de gesamten Skeletts. *Deutsch. med. Woch.*, Leipzig, 1918, xlix, 307.

HIP FRACTURES WITH A REPORT OF FORTY-TWO CASES TREATED WITH THE FLEXED SPICA.

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IN 1916 I reported a small series of sixteen cases of hip fracture treated with a flexed spica cast and the sitting position during con-

valescence. There was one other case included in the series whose physical condition made it seem inadvisable to attempt any treatment. This patient died a few days after she was injured.

The frequent repetition of the expression that "there is nothing new under the sun," makes one hesitate to claim precedence in originating a new method of diagnosis or treatment. During the eight years that I have employed this method, I have been unable to find mention in surgical literature of hip fractures treated by immobilization with a spica cast in flexion and abduction prior to 1912, when I began using it.

To describe the method very briefly it may be stated that it is an adaptation of the abduction cast advocated by Whitman, which enables the patient to maintain a sitting position throughout convalescence with the injured leg immobilized.

A review of my case histories shows that, since the report of seventeen cases published in 1916, I have seen thirty-one cases of hip fracture, making a total of forty-eight patients. Forty-two of these patients have been treated with the flexed spica. Six were in such poor physical condition when seen that any treatment whatever seemed inadvisable. Five died a few days after injury while the sixth is still living.

This report is submitted with the realization that the series of treated cases is not a large one. There have been several reports in recent literature of a larger series; but being compiled from the records of the larger hospitals they represent in most instances the work of several surgeons. As obtains in most hospitals the number of methods used in treating hip fractures is frequently in excess of the number of surgeons on the staff. As a result, only in rare instances, is there a large series reported from any one clinic treated by the same method. We are also left in doubt by the majority of writers as to the age of the patients treated, the type of fracture and other essential data for basing our opinions regarding the value of the method of treatment carried out.

The series of cases here reported is made up of patients seen in private practice since 1912 with the exception of a few treated at the Brockton City Hospital from 1912 to 1916 inclusive. No case is included treated other than by myself.

Convalescence has frequently been cared for by the family physician as it is rarely necessary to keep patients in the hospital after they are accustomed to the cast.

There has been so much criticism in recent literature of the older methods of treating hip fractures, that it would seem a waste of time to consider this phase of the subject in detail here. Some good results have been obtained with every method that has ever been

used. In fact, good results have been obtained in certain cases with no treatment. The value of a method of treatment should be determined by its range of applicability, by its effective immobilization of the bone fragments, after they have been placed in apposition, and by the functional results obtained not only in the type of injuries that give satisfactory results with almost any treatment, but with the generally recognized difficult cases.

It is conceded by most surgeons that the fractures involving the great trochanter will unite by bony union under any circumstances provided the patient survives treatment. This is probably due to the fact, as shown by Lexer's study of the blood supply of the head and neck of the femur, that the blood supply to the proximal fragment in this type of fracture is little impaired. Disability in these cases is due to faulty position, adduction or coxa vara and loss of muscle balance. It is also conceded that with early recognition, proper reduction and immobilization non-union and imperfect function are extremely rare in children and young adults. Except in rare cases of general systemic disease, any method of treatment is well borne in the young. Bony union is the usual result even in the intraepicapsular fractures; joint and muscle function are quickly reestablished after treatment.

The real problems in the treatment of hip fractures are those that occur in patients past middle life, especially in the intraepicapsular type of fracture, either impacted or loose. A certain small percentage of this type of cases are healthy and robust and will tolerate any method of treatment. The majority however have a low reserve of energy, their physiologic balance is unstable, either as a result of senility or as more often occurs from systemic disease, to which the aged are prone. They are overwhelmed by the injury, grave symptoms of shock are presented and uraemia or other systemic conditions develop. If active measures are not instituted at once to combat these symptoms hypostatic pneumonia soon supervenes with the usual fatal result. In the past, it has been these types of cases that have made up the large majority of hopeless hip fractures. They have received either no treatment or treatment of the most perfunctory sort and have been doomed to an early death or invalidism for the rest of their days. The old ultra-conservative rule of "treat the patient then the fracture" has been followed with the result that the immediate mortality has remained unchanged and the percentage of life-long invalids is little lower than fifty years ago.

These are the types of patients for which the method of treatment to be described was devised. The cases here reported were in no way selected, but through good fortune they were in most instances the type of case suited to prove the efficiency of the method. The

average age of the forty-eight patients was sixty-five years, and four months.

The essentials in the successful treatment of fractures deserve particular emphasis in the handling of hip fractures. No fracture of a long bone in the body results in so great immediate mortality or so high percentage of disability following treatment. Early recognition and treatment are most essential to good functional results and should now be obsolete topics in surgical literature. Broadly speaking, the lack of observance of these principles is the cause of many poor results in the treatment of hip fractures. In an analysis of one hundred and twenty cases of ununited hip fractures treated at the Mayo Clinic, Henderson states that: "non-union in the majority resulted from incorrect diagnosis at the time of accident"—and—"In none of the cases in this series was there a history of really proper treatment for the fracture."

No fracture with displacement of the fragments gives a high percentage of good results if untreated for two or three weeks after injury. Industrial surgeons have shown that many of the crippling injuries of the hand are due to unrecognized and improperly treated fractures.

The question of reduction of hip fractures is still open. Certain factors enter into these fractures especially in the aged which obtain in no other long bone: absorption of the ends of fragments in loose fractures, poor reparative function of the bone and tearing of blood vessels with destruction of the remaining blood supply to the proximal fragment during reduction. These are some of the factors which have led often to unnecessary conservatism in the treatment of impacted fractures. Cotton has shown in his reimpaction method of treatment that impaction of the fragments is undoubtedly a factor in bony union of the neck of the femur even though it is recognized as unnecessary in other fractures. Sir Robert Jones states that "if the foot is in good position without any outward rotation and the shortening is not more than might be reasonably expected in any case, then it is not necessary to disimpact." Generally speaking the younger the patient, the wider the margin of safety in correcting deformities and the less likelihood of non-union following reductions.

The ideal reduction of fractures is reposition of the fragments to their original anatomical position. When this position is not attained we fail in accomplishing the ideal. In hip fractures especially in the aged the ideal reduction is frequently not obtained owing to the poor condition of the patient and the chance

of non-union following disimpactions. In recent years the margin of safety in the active treatment of hip fractures in the aged has widened considerably and many patients who formerly received no treatment are now offered the opportunity of adequate reduction and immobilization.

I cannot subscribe to the statements of some recent writers that the problem of hip fractures is entirely a mechanical one and that we may correct deformities of the neck of the femur with as little hesitation as in the reduction of other bones. Treatment should be based primarily upon the patient's condition to withstand manipulation and the application of apparatus. Secondly the amount of deformity accepted as an indication for corrective measures should be in direct proportion to the age of the patient.

After reduction, the maintenance of the fragments in apposition is the primary object for which every method of treating hip fracture was devised.

Other considerations are prevention of muscle contractions, stiff joints, etc., but these are subordinate to the position of the fragments. Maintenance of apposition of the fragments must be constant throughout convalescence and in so far as any given method fails to constantly immobilize, it falls short of affording ideal conditions for union. Only one writer on hip fractures in recent literature, McGlannan, has favored motion of the fragments in hip fractures as an aid to union. All methods of treatment embodying a splint applied to the leg alone and not attached to the pelvis, as in the Jones abduction splint, fail to immobilize the upper fragment constantly. Each movement of the patient's body changes the position of the leg. In unimpacted fractures a certain amount of motion of the fragments is thus allowed, delaying union and probably in many cases is a factor in absorption of the ends of the fragments. Impactions are in many instances disengaged by the motion of the limb thus lessening the patient's chance of union.

If we accept the premise that immobilization of the fragments after anatomical reposition affords the ideal conditions for union, then all methods such as splint and traction to the leg, sand bags, etc., which do not fulfil these requirements, should be discarded in hip fractures, provided the patient can withstand treatment. The methods remaining are some form of splint, which immobilizes the trunk and pelvis with the leg, the best known being the Jones abduction splint, a plaster spica of the type advocated by Whitman, or a modification



FIG. 1.—Position in which the legs are held during the application of cast. Both legs are abducted as far as possible and upward, outward traction is maintained in the injured leg at the calf.



FIG. 2.—Side view before applying cast, showing flexion at right angles of thigh and leg.



FIG. 3.—Cast applied, thigh in complete abduction.



FIG. 4.—Side view of same patient.



FIG. 5.—Patient sitting in chair immediately after cast has hardened. This patient was not anaesthetized.



FIG. 6.—Loose intracapsular fracture after reduction, showing position maintained by cast.

12.5%, were in such poor condition when seen that no treatment was advised. Five of these died in a few days, the sixth was suffering from an acute gall bladder at the time of injury, which made it necessary to treat the leg with sand bags. She recovered from the gall bladder infection but has an ununited fracture.

The other two patients who died during treatment, death in one case occurred many weeks after injury from decubitus, and in the other diabetic coma was the cause.

The mortality of hip fractures treated and untreated in many statistics is stated to be from 20 to 40%. Were the mortality rate of all cases seen published with the results obtained in the treated cases, we could better judge the value of the methods of treatment especially in the aged.

The method of treating hip fractures with the flexed abducted spica was primarily devised for old, feeble patients, who are poor surgical risks and are poor subjects for bed treatment. In the present series there were forty-three patients over fifty and thirty-five patients over sixty. There were two deaths during treatment and five deaths of the untreated cases, an immediate mortality of about 14.5%, and a mortality in the 42 treated cases of but 5%.

The fact that thirty-four of these patients were women and but fourteen men is an illustration of the effect of the sedentary life led by American women,—in old age they are afflicted more with instability and lack of coordination than men.

The number of intracapsular as compared with the extracapsular fractures in the series deserves explanation as there is still some discussion over this academic and at the same time rather practical question of classification. The classification here used is based upon the anatomical attachment of the capsule. With the exception of case 1, only those in whom the x-ray showed the injury to be outside the line of attachment of the capsule were diagnosed extracapsular. Crushing injuries at the base of the neck were diagnosed intracapsular fractures.

There were twenty-five good results in the series of forty-two treated cases, about 60%; 11 poor results with two deaths during treatment, six untreated and four not heard from. Of the twenty-five good results fourteen were impacted, six loose intracapsular fractures and five extracapsular. The intracapsular fractures deserve mention, as the results are suggestive of the value of impaction as an aid to union in hip fractures. In the aged this type of fracture with much shortening and deformity was reduced. The reduction was accomplished by traction and "moulding;" great care was exercised not to "break up" the fracture.

Of the loose intracapsular fractures occurring in this series six died as an immediate re-

sult of the injury, one was untreated and is still living. Of the treated cases there were six good and six poor results, about 10% lower than the impacted fractures, one was not heard from.

In regard to the application of the cast, it was found that application down to the calf of the leg resulted in an unpleasant edema of the leg and foot. The cast has since been extended down to include the entire leg and foot to the toes. Placing the foot in inversion in the cast seems to have a beneficial effect on the position assumed after treatment.

After reduction strong upward traction and extreme abduction are made beneath the calf, while the cast is applied down to the assistant's hand making the traction. See Figures 1-2. The cast is allowed to "set" before traction is removed. By this means the fragments are held in apposition during the application of the cast and they remain immobilized throughout treatment. Backward displacement or rolling of the trochanter, which Whitman has mentioned in the application of his cast is automatically corrected by the position in which the leg is placed in applying the cast.

Stiff joints and contractions following this method of treatment, as possible complications mentioned by Cotton and Whitman, have occurred in but one case of the forty-two treated cases here reported. In this case the cast was removed by the family physician and no attempt made to extend the leg. It is my practice to have the patients massaged after the removal of the cast until joint function in the leg is normal. I have rarely seen this require more than two weeks. One patient, a man of sixty-one at the time of fracture, had had a severe arthritis for many years. Since recovery from his injury, now nearly nine years, he has been able to get about as well as ever.

REFERENCES.

- Bradford: *Boston Med. & Surg. Jour.*, July 3, 1919, 10.
Campbell: *Ann. Surg.*, 1919, 70, 600.
Cotton: *Ann. Surg.*, 1916, 63, 369.
Delbet: *Bull. et. Mem. de la Soc. de Chir. de Paris*, 1919, 45, 305.
Hunkins: *J. Orth. Surg.*, 1918, 16, 291.
Jones: *Jour. Orth. Surg.*, Oct., 1913.
Jones: *Orth. View of Treatment of Fractures*, 1914, 29.
McGlennan: *S. G. O.*, 1919, 22, 287.
Moore: *Bost. M. & S. Jour.*, Sept. 28, 1916.
Nix: *New Orleans M. & S. Jour.*, 1915, 16, 68, 768.
Schaffer: *N. Y. Med. Jour.*, 1897, 62, 557.
Sever: *Bost. M. & S. Jour.*, Jan. 19, 1919, 180.
Steinke: *Ann. Surg.*, 1915, 62, 610.
Todd: *Med. Jour., Australia*, 1917, 1, 27.
Whitman: *S. G. O.*, 1918, 27, 583.

LATERAL SINUS INFECTION: DIAGNOSIS, TREATMENT AND COMPLICATIONS.

BY G. L. TOBEY, JR., M.D., BOSTON.

THROUGH constant repetition in medical literature and as a hospital colloquialism, the terms "Sinus Thrombosis" and "Sinus Phlebitis" have come into general use as a definite

pre-operative clinical diagnosis. One, or both, of these terms is a misnomer in a large number of cases; it is not unusual, in a so-called typical case, to open a lateral sinus in which there is no evidence of thrombosis or demonstrable phlebitis, and have complete recession of symptoms follow. I feel that the term "Sinus Infection" should be used in the clinical reports of cases showing the accepted symptomatology unless demonstrable phlebitis or thrombus has been shown to be present. These misnomers have undoubtedly led to much of the apparent confusion among otologists as is frequently demonstrated in discussions.

The terms "typical" and "atypical," when used as descriptive of clinical cases, are not only misleading but are most decidedly misnomers. There is no "typical" or "text-book" train of symptoms in the early cases—the generally accepted typical symptomatology is present only when septic thrombosis has taken place and the patient has a general septicemia. Since there is no typical symptomatology, the corollary must be equally true, and we are, therefore, unjustified in reporting cases as "atypical." Cases of obscure or difficult diagnosis should be reported "yes."

A correct diagnosis of the condition present can be arrived at only by very careful and painstaking clinical and laboratory observations; the consulting otologist is many times, however, obliged to depend on clinical evidence and his experience, when in consultation where laboratory facilities are lacking, and also on his operative findings.

A history of existing or pre-existing middle ear suppuration is the rule, although the otitis media may have been so slight as to cause no perforation of the drum membrane, the middle ear returning to normal within a few days, and yet may give rise to a supervening sinus infection with or without demonstrable mastoiditis. This is not a rare occurrence and does, I think, account for many of the cases of so-called "primary mastoiditis" and "primary sinus thrombosis."

For purposes of mental classification we may divide the cases into three groups; the one which may be termed the *septic explosive* type, in which cases the symptoms are most violent from the very onset and the patient is evidently suffering from a very acute infection; second, what may be termed the *typhoidal* type, in which cases there is an apparently low-grade infection and the differential diagnosis is relatively difficult, and arrived at only by very careful exclusion; and third, the *latent* type, having intermittent mild symptoms of septic absorption for weeks or months following a mild acute suppurative otitis media of short duration and suddenly "blowing up" with a virulent meningitis. This latter type is not uncommon and is practically always fatal.

In the general consideration of the symptomatology there are four distinct types of temperature charts:

Type A—The accepted picture of acute sepsis with very sudden elevation of several degrees and equally sudden remissions to normal, or even sub-normal. This may occur several times within a few hours, or but once or twice during the twenty-four. The temperature should be taken every two hours in suspected cases, since the rise and fall takes place in a very short space of time, and is often lost on a four-hour chart. There may be one or two excursions of temperature followed by twenty-four, forty-eight, or even seventy-two hours of normal temperature, with a repetition of excursions.

Type B—The temperature showing a persistent irregularity of one to two degrees above normal to slightly below, during the twenty-four hours.

Type C—An elevation of two to three degrees, which does not remit to normal but shows slight remissions and elevations from 100° as a basis. This may persist for several days and then return to normal. This type nearly always recurs after remaining at normal for a few days.

Type D—It is not an uncommon experience to find a definite sinus thrombosis, and occasionally a broken-down sinus wall and fistula, in doing the mastoid operation, the temperature chart at no time having shown any temperature whatsoever. In a series of seventy-three cases this occurred eleven times and in three cases the sinus wall was completely necrosed.

The pulse usually follows the temperature and has been found of little diagnostic value.

This great variation demonstrates clearly that the temperature cannot be considered a definite diagnostic symptom. Its presence indicates infection, but its absence or its atypical characteristics do not preclude an infection of the sinus.

The temperature chart must, however, always be taken into consideration in forming the conclusions as to diagnosis.

Great stress has been laid on the presence of chills. True rigor occurs in less than 50% of the cases. A large majority will complain of fleeting chilly sensations, accompanied by sweating. This is not, as a rule, volunteered by the patient, but is brought out by inquiry. A common occurrence when making a visit is to find the patient's night clothes moist, or even saturated, and on inquiry the patient says that he has occasional "hot flashes." The latter manifestation is often overlooked, yet is most suggestive of infection.

Subjective head symptoms are usually present and may be described as of three general types:

(a) Sensation of indescribable pressure and heaviness, usually localized to affected side, and inclination to rest that side of head on hand or pillow.

(b) Intermittent darting pains (without the intensity of a tic) radiating toward the temple and upward toward the median line, seldom toward the occiput.

(c) Restlessness at night, with inability to sleep owing to a dull, grinding, indescribable headache—patient is seldom able to give a lucid description or definitely to localize the pain. This type must always be taken into consideration as it is a most frequent forerunner of sinus infection, and more especially of basilar meningitis.

The toxemia has a peculiar characteristic in that there are intermittent periods of exhilaration and feeling of well-being, followed by periods of depression.

Optic neuritis or choked disc may be present in a small percentage of cases (10% to 11%) due to meningeal irritation and infection, or from extension of the thrombus and consequent blocking of the petrosals, or even involvement of the cavernous sinus.

A more common nerve lesion is paresis of the sixth. This is toxic in origin and not infrequently found in acute suppurative otitis media.

A serous meningitis with a positive Noguchi and Ross-Jones has been observed in several cases.

In a series of over one hundred cases the average leucocytosis was 15,000, with a polymorphonuclear percentage of seventy-eight. The leucocytosis is of value only when taken into consideration with the other symptoms present, and when taken in series.

Blood Culture. Too much emphasis has been placed on the value of the blood culture as a diagnostic sign of the presence or absence of sinus infection. It is regrettable that so much emphasis has been placed on this point, since a review of recent literature repeatedly reveals cases of unnecessary delay and undoubted avoidable deaths. When a bacteremia is present it is an indication of infection and, when taken into consideration with the other symptoms present, is an aid in the diagnosis, but it must be borne in mind that it may be positive in practically every acute infection—as pneumonia, tonsillitis, acute endocarditis, erysipelas, etc. A negative culture does not preclude the presence of infection since it may be negative today, positive tomorrow, and again negative on the following day. The author has repeatedly observed cases, with demonstrable septic sinus thrombosis, which at no time showed a positive blood culture.

Edema or infiltration, with tenderness on deep pressure over the area drained by the mastoid emissary vein, was the most constant

objective symptom which was found present in a large series of cases, and was present in practically every case of mural or complete thrombosis of the sigmoid sinus. This sign or symptom is quite distinct and readily differentiated from mastoid edema and tenderness, and, *per se*, never extends forward over the posterior border of the mastoid.

The same symptom or sign is found just below and posterior to the mastoid tip due to blocking or infection of the posterior condylar vein which enters the sinus, as a rule, just before it forms the jugular bulb. (This vein is not constant.)

Sufficient emphasis has not been placed on this symptom in the past.

Enlargement of the external jugular on the same side is not infrequently observed. As to the value of this observation I am unprepared to state, yet it may be borne in mind in a case of double mastoiditis having other symptoms of infectious thrombosis.

Tenderness along the course of the jugular is frequently present, practically always due to infection of the cervical glands from the original otitis media and mastoiditis, and is of no practical value in diagnosis of sinus infection. In not one of over three hundred cases of sinus infection in a large aural institution has this sign been demonstrated to be of value.

Since a large extra-dural or perisinus abscess will, in a certain number of cases, simulate symptomatically a lateral sinus infection, the mastoid operation should be performed, and in every case the sinus should be exposed before ligating the jugular. Undoubtedly there is concomitant direct infection of the endothelial lining of the sinus with, mayhap, a slight parietal thrombus formation. Having found, however, that the majority of such cases receive immediate and permanent relief by drainage of the extra-dural abscess, it is my practice not to interfere with the sinus nor ligate, in the absence of a demonstrable necrosis of the sinus wall, or very marked evidence of septicemic or pyemic symptoms. Should subsequent developments demand, the sinus operation may be performed.

Anatomically, the type of mastoid apparently plays no important rôle. Sinus infection found in cases showing few, if any, well-developed mastoid cells, with the lateral sinus infringing on the antrum and posterior canal wall, suggests this as an etiological factor; yet, in the large number of this type of mastoid encountered, the percentage of sinus infection is no greater than in the broad, deep, well-developed mastoid process.

Prognosis. It is impossible to make a definite statement as to the prognosis of this condition since death is due, in all cases, to an intercurrent or supervening complication, and not from infection of the lateral sinus *per se*.

In considering the prognosis each case must be taken as a unit.

A review of the causes of death in twelve cases shows two from cavernous sinus thrombosis, six cases of septic meningitis, three cases of temporosphenoidal abscess; one case of cerebellar abscess.

The prognosis, as influenced by ligation or resection, is equally hard to determine. We do know, however, that practically 90% of the cases of simple ligation recover, but, on the other hand, there are a very large number of unrecognized or recognized but not operated on cases which recover after a longer or shorter course, with or without pyemia.

Operative Treatment. If, owing to the previous subjective and objective symptoms, or if the conditions found at the mastoid operation indicate the possibility or probability of sinus infection, the lateral sinus should be exposed. The bony wall covering the sinus should be removed by means of a chisel, sharp spoon curette or rongeur. No definite steps of technique can be laid down since the contour and the conditions present differ in each case, and the technique of the individual operators varies.

As a general principle, however, in the cases where the sinus is not exposed by disease, the knee of the sinus seems to be the point of election for the original exposure. I have found the use of a sharp gouge or the spoon curette to be the safest. In this way the bony covering may be taken off gradually without the danger of perforation of the sinus wall, and by this means no sharp spicules of bone are driven into the wall of the sinus.

A small exposure having been made, it is readily enlarged, either by the introduction of a curette between the sinus wall and bone (the sharp spoon of the curette being outward), or by the introduction of a small, right angle rongeur.

In the use of the rongeur care must be taken that the wall of the sinus is not nipped between the lip of the instrument and the bony wall. This is not an uncommon accident.

The bone should be removed over the sinus downward and forward to the jugular bulb, and backward from the knee toward the torcular.

I have made it a rule, where there is a question of sinus infection, to expose the emissary vein when feasible, and to remove the bony wall of the lateral sinus beyond the edge of the sinus on each side. Injury of the sinus is most common in removing the bone just beyond the knee where the sinus wall is usually in very close contact with the cortex, and, at the lower end of the sigmoid portion, just above the jugular bulb. At this point one is working at a difficult angle.

In cases where disease has destroyed a portion of the sinus wall the remaining bone

should be carefully removed by means of the curette and rongeur, and the sinus wall exposed backward for at least one-quarter to one-half an inch beyond the evident involvement, and the bone should be removed below as far as possible toward the jugular bulb.

The sinus wall itself should now be very carefully investigated. The presence or absence of a necrotic area in the sinus wall should be determined. In the absence of a definite fistula through the wall it is absolutely impossible to make a definite statement as to the presence or absence, or type of infection or pathological change which may have taken place within the sinus itself.

I have discarded the use of the old test puncture since it is most unreliable; and there is the added danger that the needle may, in the presence of a partially collapsed sinus, be passed through the dura, with a resultant infection.

I have many times demonstrated the presence of mural thrombi by making a small incision in the sinus wall, using a very sharp knife, very slowly cutting through the wall of the vessel and, on incising the endothelial layer, have demonstrated the presence of blood clot.

The thrombosis of the vessel has also been demonstrated by opening the emissary vein, having first passed a ligature around this vein proximal to the point of opening, then inserting a small sterile silver probe into the lumen of the sinus. The use of this probe is necessary since the valve-like opening of the emissary vein into the sigmoid sinus often prevents the flow of blood from the sinus into the vein.

The most satisfactory and conclusive method is that of free incision of the sinus wall. Pressure is applied between the cortex and the sinus wall toward the jugular bulb, and at the upper limit of the sinus exposure. An incision is then made through the wall, care being taken that the inner wall of the sinus is not injured. The lumen of the vessel is then readily explored. The sinus wall having been incised, the lower plug may then be loosened to demonstrate the presence or absence of obstruction in the bulb. The same procedure is carried out at the upper end of the incision to demonstrate the presence or absence of obstruction.

A positive diagnosis of involvement of the sinus being present, we should immediately proceed to cut off the direct communication of the sinus with the general blood stream. It seems to be a most mooted question as to just what procedure should be undertaken under these conditions. On the one side there is the relatively conservative, simple ligation of the jugular vein; on the other, the more radical excision. Statistics bear me out in saying that the simple ligation is the logical operation,

bearing in mind that it is necessary in a small percentage of the cases to proceed with complete excision of the vein.

In over 200 cases, in a large institution, it has been found necessary, owing to extension of the infection in the jugular below the facial vein, to resect in only two cases.

In favor of simple ligation we have first, the relatively few cases requiring complete resection; second, the very short time required for the operation, (ten to fifteen minutes) with the consequent small amount of shock to the patient, non-exposure of the tissues of the neck to infection, the very small, insignificant scar; and finally, the ultimate results as shown by statistics.

The disadvantages of resection, on the other hand, lie, first, in a much more extensive operation, requiring in average hands a long period of time with the consequent added shock to an already very sick patient; second, the opening up of a tremendous area to infection; third, the resultant, in many cases, unsightly scar, (and I do think that esthetics should be taken into consideration when possible and safe); fourth, statistics and careful observation over a very large series of cases have shown that this extensive operation is unnecessary except in a very small percentage of cases. I am not making the statement that resection of the jugular vein is not necessary, but I do say that it should not be done unless it can be definitely demonstrated that septic thrombosis has extended below the point of election in ligating.

Technique of Ligation of the Jugular Vein. The point of election for ligation is the superior carotid triangle, and at about the level of the thyroid cartilage, above the junction of the facial vein; this allows the facial vein an opportunity to aid in establishing the collateral circulation.

My procedure in recent cases has been to tie high, first outlining the natural transverse folds of the skin below the jaw, with the chin in the median line, and then making a small incision one to one and one-half inches in the long axis of one of the deepest depressions. The head is then turned to the opposite side and a small sandbag placed under the shoulders, thus giving a slight extension of the neck. Incision is then carried through the platysma muscle, a curved Mayo scissor is then inserted just in front of the sternocleidomastoid muscle, and by means of dry dissection the carotid sheath is readily brought into view. The deep dissection is carried on until the facial vein is demonstrated. A double number one chromized gut ligature is then passed around the vein just above the facial. These two ligatures are then separated for about one-half an inch, and by the use of traction the lumen of the vessel between the ligatures may be alternately

opened and closed, and the patency or obstruction readily made out.

When the vessel is evidently patent, the proximal ligature is first tied (that is the one nearer the jugular bulb). The distal ligature, the blood having been expressed from between, is next tied. The ligatures being cut, the vessel is dropped back into place, one or two interrupted catgut sutures are taken in the superficial fascia, the skin is then closed with two or three horsehair sutures, and a collodion dressing is applied.

Many operators advocate cutting the vessel between the ligatures. There is no advantage in this procedure, and it opens an avenue for direct infection of the deep tissues of the neck, especially in the presence of a positive bacteremia, or in the presence of a slight infection of the endothelial lining of the vein. Certainly nothing is gained by this procedure, and it should be discarded as unnecessary and dangerous.

Should the jugular vein be found to be unquestionably thrombosed and infected, as occasionally occurs, the operator may simply extend his operation and do a complete resection. The jugular having been ligated or resected, we proceed with the lateral sinus operation.

The plug at the lower end of the sinus is removed, and in the presence of free hemorrhage, which demonstrates a patent inferior petrosal and condylar vein, this plug is immediately replaced, and nothing further done at this time. In the absence of free hemorrhage, however, the bony sinus wall must be removed downward and backward as far as possible, to give access to the jugular bulb. I find that sufficient exposure is obtained without the radical procedure of Grunert. A small curette (one with a malleable handle being preferred) is then used to remove the clot of broken-down thrombus from the bulb, in so far as possible. Very frequently during this procedure free hemorrhage from the petrosal results. Should no free hemorrhage be obtained, a small gauze wick, plain or iodoform, is passed into the cavity. The plug is then removed from the upper end of the sinus in the region of the knee. The membranous sinus wall and the bone overlying should be entirely removed to a point beyond the presence of demonstrable thrombosis, the removal of the bone always preceding slightly the removal of the membranous portion of the sinus.

A procedure which may be used is that of trephining the cortex over the lateral sinus, from one to one and one-half inches posterior to the knee, and beyond the superior petrosal sinus, and shutting off the blood stream by pressure with a small roll or a plug of gauze placed between the cortex and the dura. By this means, free exploration of the sinus wall up to and in the presence of thrombosis of the superior petrosal and even beyond this vessel,

is facilitated. By this means a thrombus is formed by a back pressure which has no direct communication with the infected thrombus. Should, however, the infection be found to extend posteriorly to the point of exposure, another exposure may be made further back. In this way we have a control, not only of the tremendous hemorrhage incident to the primary removal of the thrombus, but we also have a control of hemorrhage at the first few subsequent dressings. This plug may be left *in situ* for five or six days. The opening is then readily closed and leaves practically no scar.

An iodoform or plain wick is then passed along the trough of the exposed sinus and a light gauze packing is placed in the mastoid cavity. This dressing is changed, if no untoward symptoms intervene at the end of four or five days. The wick is removed from the jugular bulb region; if clean, another wick is inserted. Should there be a slight amount of pus, this is readily removed by means of irrigation. The wick is also changed at the upper end of the sinus at this time. The pressure is relieved from the accessory plug and, if no hemorrhage occurs, this is permanently removed at this time; otherwise it is left *in situ* until the next dressing, two days later.

Should there be a continuance or recrudescence of the septic symptoms, we must consider first the question of metastasis before ligation; second, secondary infection of the neck at the point of ligation or resection; third, infection in and just below the jugular bulb; fourth, extension of septic thrombosis toward the torular; fifth, intercurrent acute infections; sixth, iodoform poisoning, if iodoform was employed in the dressing.

Physical signs of a small metastasis which has occurred before or immediately after ligation may be delayed for several days. The first symptoms being those of sepsis, with a beginning localized tenderness at some distant point. The common location is in the body of the long muscles, especially in the calf of the leg. When it occurs in one or more of the joints, a careful differentiation with acute arthritis must be made, since we may have an intercurrent true arthritic infection. Metastases in the lung are fortunately rare, but must always be considered under these conditions. Secondary deep infection of the neck, following ligation where wound was closed, occasionally occurs. I have seen several cases where no objective evidence indicating a neck infection could be found for two or three days after the septic temperature had occurred or recurred; free drainage immediately relieved the temperature.

The statement has often been made in meetings, and I have also found it in print, that in simple ligation without removal of the jugular bulb and vein we are leaving a large

sack of pus which does not have free drainage, the reason given being that pus does not readily drain uphill. I think that the men making this statement have neglected to consider the fact that their patients during this stage of the disease are in a recumbent position, and that, as a matter of fact, the upper opening of the jugular bulb is the most dependent portion involved. Statistics most certainly do not bear out the contention that this is a dangerous procedure. I have, however, in a number of cases with a recurrence of septic symptoms, found the bulb and the vein immediately below filled with fluid pus, which was readily removed by means of douching with a very small, fine catheter inserted along the course of the vessel. Seldom has it been necessary to repeat this procedure more than two or three times.

Another complication of convalescence is an extension of the thrombus and infection along the venous channel toward the torular. This condition is not, as a rule, accompanied by marked signs of sepsis, the typical picture being one of increased apathy on the part of the patient, complaint of dull, heavy headache on the affected side, with occasional increasing signs of intracranial venous congestion or pressure. I have twice found it necessary to open the sinus as far as, and even into the torular itself. Fortunately the anatomical structure of the torular, as a rule, precludes the probability of direct extension of the thrombus into the opposite sinus. In speaking of the mental heptitude and evidence of intracranial congestion as a complication, one must bear in mind the possibility of a poorly developed sinus on the opposite side or its absence altogether.

The most frequent complication simulating a symptomatology of sinus thrombosis is a localized central pneumonia. In children and in adults a small area of central pneumonia may be in existence for several days, giving rise to a typical septic temperature with chills, the physical signs not appearing for 72 or 96 hours.

Erysipelas must be taken into consideration, especially the type which gives evidence of sepsis for several days before local objective signs occur. We must also bear in mind the question of malaria, acute tonsillitis, acute arthritis, the focal infections, etc.

The frequent use of iodoform as a dressing has led to occasional cases of acute iodoform poisoning. The onset is very acute, usually ushered in with severe chill, and temperature of 102° to 104°, profuse sweating, and running a definite septic temperature chart. The local manifestations, such as marked redness and swelling, which embrace the whole auricle and the region about the wound would lead one to suspect the source. This readily subsides on the thorough removal of the iodoform.

A very unusual and rare complication is the occurrence of a septic sinus thrombosis on the other side. I know of but one authentic case of this condition in which one jugular was tied, with complete opening of both lateral sinuses, and ultimate recovery.

THE HOSPITALIZATION OF THE SYPHILITIC PATIENT.

THE NEXT STEP IN PROPHYLAXIS BY TREATMENT.*

BY HERMAN GOODMAN, B.S., M.D., NEW YORK CITY.

FOURNIER advocated the institution of dispensaries for the treatment of syphilis, and to a great measure, his opinion has led to the neglect of the hospitalization of the syphilitic. Conditions, however, have materially changed since the father of modern syphilology pointed out the defects of the hospital treatment of the disease, and the advances of the twentieth century, especially in specific arsenic chemotherapy, make it desirable to present data leading to the hope that there will be a wider use of the hospital bed in the treatment of early syphilis.

PREVALENCE OF SYPHILIS.

Although it is difficult to get an adequate idea of the prevalence of syphilis from the study of one community, or from one group of a community, many studies have been recently published which indicate that about 10 per cent. of the population have or have had syphilis.

Among 1,019 recruits from and about New York City, Vedder estimated that 16.77 per cent. were probably syphilitics, although these men had been passed by enlistment officers and were presumably free from active manifestations of syphilis. Among 631 cadets, Vedder estimated that 5.46 per cent. were probably syphilitic.

Greeley reported that 91, or 8.4 per cent., of applicants for license to peddle in New York City, gave positive Wassermann tests. From his work at the Tombs, Hart's Island Reformatory, and at the Penitentiary, Blackwell's Island, he concludes, "There seems every reason to believe that routine Wassermann tests made on the entire adult population of the city would give positive results in approximately 10 per cent. of the cases examined."

Of 1320 pregnant women examined at the Sloane Maternity Hospital, 8.7 per cent. gave three or four plus positive Wassermann reactions.

* This is the second of a series by Dr. Goodman on some of the problems of syphilis. The first on "The Syphilis Clinic" appeared in this JOURNAL, December 9, 1920, the third, on "The Syphilis Department of the In-Patient Hospital," will appear in an early issue.

Of patients in need of dispensary medical service, the University of California reported that 544, or 6.9 per cent. of 7,885 cases, showed syphilis.

In the medical wards of the Presbyterian Hospital, Dr. Longcope estimated that one-fourth of the patients gave positive Wassermann reactions. The Boston Marine Hospital reported 77, or 24.7 per cent. of 312 cases as positive, and if the known syphilitics, and those in whom the reaction was negative as the result of treatment were added, the percentage is raised to 28.2 per cent. Hornon reported that 87 of 500 patients, or more than one out of every six, had a positive Wassermann result, although in only 18 of these cases was a probable diagnosis of syphilis made. Sixty-nine out of the 500, or 13.8 per cent., of the cases not showing obvious signs of syphilis showed a positive test. Of 15,000 patients entering Bellevue Hospital, 22 to 25 per cent. gave positive Wassermann results. Rosenberger reported about the same percentage (27.4) as the index of positive Wassermann reactions performed in 1916 on 4430 patients at the Philadelphia General Hospital.

Surveys of special hospitals, and from other classes of the population, show much higher rates of Wassermann positives, for example, 46 per cent. of 791 prostitutes examined serologically gave strongly positive reactions.

It is interesting to give the following figures from a report of Rupert Blue, former Surgeon General of the United States Public Health Service: 28,285 cases of syphilis were reported to the U. S. P. H. S. from state boards of health in the United States for the three months' period,—July, August, and September, 1919; an average of 307 reported for each day of the period.

What the figures just cited mean may be appreciated if considered in this way. Each of the cases reported brings into light another case, the source of the reported infection. The source may be among those reported, or one person may have been the source of infection for more than one of the reported cases, as may be demonstrated by using Blaisdell's figures. "Every syphilitic case," he writes, "definitely exposes many innocent, clean living people to the disease. Sixty cases of fresh syphilis exposed 134 by coitus, 442 by family or boarding house life, and 651 by occupational association,—1227 people in all." In another paper, Blaisdell writes of the problem of the patient with syphilis by reason of his marital life. In 30 families, 59 out of 62 parents were probably infected. Of the 132 possible children, only 23, most of whom were born before their parents' infection, were healthy. Of the remaining 109, syphilis claimed, through miscarriage, early death, or congenital disease, at least 83 pregnancies.

Consider the further harm that is done when 28 per cent. of the patients with active symptoms of syphilis entering Blaisdell's clinic, for example, in one year, never returned for treatment. Seventy per cent. made less than five visits, a number insufficient, in most cases, to relieve the presenting symptoms for which they entered. After the first few months, the syphilitic patients, as a whole, averaged only 25 per cent. of the visits required for minimum efficient treatment. Barringer and Platt reported that 29 per cent. of 116 syphilitics in a New York City dispensary came but once; 30 per cent. came two to five times; 12 per cent. came five to ten times; and only 29 per cent. made more than ten visits.

Of course, not all of those that failed to return should be considered as having given up treatment. In all probability, some entered another clinic, a few went to private physicians, and many consulted the drug clerk or patent medicine counter.

The question of the value of early and intensive treatment of syphilis need hardly be recapitulated. The observers are all agreed that the best effects of arsphenamine (salvarsan) therapy are in the early stage of syphilis, prior to the dissemination of the disease as evidenced by the positive Wassermann, but even then, much better than when the generalized secondary symptoms are manifest clinically as eruptions of the skin, mucous membrane, or those much sadder cases which show nervous system involvement.

Through the discovery of the causative agent of syphilis, the spirocheta pallida, or as some call it, the treponema pallidum, syphilis may be diagnosed with certainty, in most cases of the disease, in the chancre stage by the demonstration of this organism under the dark field, or by appropriate staining. A single arsphenamine (salvarsan) treatment in the chancre stage means rendering the patient non-infectious within a few hours, for a short time. Continuation of this form of therapy at frequent intervals, and in proper dosage, usually cures the patient. In the later stages of the disease, the possibility of ultimate cure is decreased, but not negated, if we exclude the parietic, the tabetic, and the patient with optic atrophy.

The United States Army Manual of Venereal Diseases stated that the cantonment hospital should have under their care all cases of syphilis, during the early infectious stage, and which have chancres, mucous patches, or condylomata.

In civilian life, many objections have been raised to the hospitalization of the syphilitic. It would appear that few of these objections are valid. The space of hospitals is limited, and there is no place for the syphilitic, has been advanced as a reason for the non-admittance of the syphilitic. It can readily be

shown that there is false reasoning in this. Although it is admitted that the facilities set apart for the syphilitic are inadequate, the syphilitic does occupy the hospital bed, even in those hospitals which do not admit the syphilitic, *per se*. Dr. Longcope has said that about 25 per cent. of the patients in the medical wards of the Presbyterian Hospital have positive Wassermann tests, practically diagnostic of syphilis. Greeley and Rosenberger report the same. Is it too far fetched to conclude that the general hospitals refuse cases of active syphilis in the primary and secondary stages, but welcome them for aneurism, tabes, and other late symptoms of the disease? A recent survey of New York City hospitals has shown that of 30 general hospitals, only 10 receive patients with recognized cases of syphilis in actively infectious stages, but that once admitted on some other diagnosis, 27 gave care and treatment, although only 17 provided the services of a syphilologist. In the City of Cleveland, only one hospital received syphilitics, the city or municipal hospital, at the same time in all hospitals there was a very high percentage of syphilis admitted because the disease was not recognized, and because the patients admitted for some other affection were found to be also syphilitic. This applied to all hospital departments.

The New York City Health Department, on March 29, 1919, reported that at that time it had no facilities whatsoever for the treatment of persons suffering with syphilis unless they are convicted or suspected persons under the terms of Chapter 264 of the Laws of 1918. Although some provision has been made for the ambulatory treatment of syphilis since that time, the statement still holds, as far as hospital facilities are concerned.

In the general hospitals in New York State, outside of New York City, a report by Weber stated that 19 out of 42 hospitals (which answered a questionnaire sent to 107) take free syphilitic patients of both sexes; and only 21 or 22 take pay patients.

Is it not pertinent to inquire if the other hospitals did not admit and treat a single case of aneurism, aortitis, syphilitic myocarditis, and other cases of chronic disease dependent on an old syphilitic infection? Did they not observe, in their wards, cases of tabes dorsalis or beginning paresis? Did no case of optic atrophy get by the admitting officer?

And while it is true that there were no facilities in New York City for the hospital care of the non-criminal syphilitic, this city sends each year, approximately, 1000 cases to the state hospitals for insane, diagnosed paresis, Locomotor ataxia, likewise syphilitic, is probably as prevalent, although there are no figures available to indicate the yearly morbidity.

Is it because of the fear of infecting the staff and other patients that the syphilitic with

lesions is not admitted? It has become a truism, almost, that dangerous syphilis is the unrecognized syphilis, and a known syphilitic is not likely to be overlooked as a source of contagion.

Do we not hospitalize the active syphilitic because of the expense? The answer is another question: Is the cost of the upkeep on the hospital less for the late syphilitic than for the early case?

Is it because of fear of interfering with the personal liberties of the patient that deters hospitalization? Again, what community considers that it is interfering with personal liberty when it confines the parietic?

Do we fear that making syphilis a disease subject to hospitalization will cause people to refrain from consulting the physician at the clinic or office? This is the argument that was brought against the compulsory reporting of syphilis to the board of health. Who will say, however, that the disease is less frequently brought to the attention of the doctor now than formerly?

Is the period of hospitalization such as will cause undue hardship on the dependents of the syphilitic? Is this a bar to the committal of the tabetic? Will not the saving to the state by the prevention of familial syphilis and other infections warrant subsidizing the family, if necessary, until the patient is non-infectious?

The hospital adds a bed and the more complete supervision possible through the discipline and organized professional and nursing staff. A hospital which admits the active syphilitic is embracing the most gigantic opportunity in preventing and treating this most prevalent and chronic disease. The hospital bed, in selected cases, may make all the difference in the world between success and failure in the attack on the diseased individual, his family, associates, and the whole community.

The hospital that has admitted a case which subsequently shows a positive Wassermann or other evidence of syphilitic infection should treat the case for syphilis concomitantly with the other treatment if feasible, or prior to discharge for the primary condition causing the admission. The Wassermann should be as routine a procedure as the urine analysis or the blood count. It will be only a short time before the spinal fluid examination will also be a routine measure for every bed patient.

Early eradication is going to result in a tremendous diminution of the prevalence of the infection, and a drop in the death rate from chronic diseases dependent on syphilis in later life, to say nothing of the saving in the syphilitic miscarriages and early deaths. The temporary hospitalization of the chancre today means innumerable hospital days saved in the insane asylum, the home for chronic and in-

curable diseases, and the feeble-minded home for children tomorrow.

Prophylaxis by treatment should not be ignored, and there is a definite and very important place in this attack on syphilis by the in-patient hospital.

BIBLIOGRAPHY.

- The papers named below have been freely drawn on in the preparation of this article.
- Baldy: Most effective method of control of venereal disease. *Amer. J. Obst.*, 1918, 78, 238.
- Blaisdell: Menace of syphilis to the clean living public. *Boston Med. and Surg. J.*, 1915, 172, 475.
- Hornes: Occurrence of Wassermann reaction among hospital patients. *Ibid.*, 1916, 174, 194.
- Blaisdell: Menace of syphilis of to-day to the family of to-morrow. *Ibid.*, 1916, 175, 7.
- Corlett: Teaching of syphilis: attitude of hospital boards to disease. *Journal A. M. A.*, 1917, 49, 1248.
- Jacoway: Discussion of gonorrhea and syphilis. *Ibid.*, 1917, 49, 1254.
- Morse: Wassermann Test in medical dispensary. *Ibid.*, 1915, 65, 1981.
- Whitney: Statistical study of syphilis. *Ibid.*, 1915, 65, 1987.
- Snow: Public health measures in relation to venereal disease. *Ibid.*, 1916, 64, 1003.
- Wile and Elliot: Critical study of 120 cases of late syphilis, etc. *Ibid.*, 1916, 67, 1917.
- Varney: Hospital opportunities and responsibilities of syphilis. *Ibid.*, 1917, 78, 1953.
- Goodman: The Wassermann Reaction and Miscarriages. *Journal of Surgery, Gynecology and Obstetrics*, 1920, 30, 368.
- Goldwater: Unfinished business of general hospitals. *Med. Rec.*, 1908, 73, 979.
- Stokes: Treatment of syphilis in special hospitals. *Modern Hosp.*, 1916, 6, 171.
- Greely: Syphilis as public health menace. *Monthly Bull. Dept. of Health, N. Y. C.*, 1915, 5, 59.
- Mewborn: What are facilities open to V. D. patients in the dispensaries and hospitals of N. Y. C.? *N. Y. Med. J.*, 1907, 85, 681.
- Klots: What can treatment do for the prophylaxis of V. D.? *Ibid.*, 1907, 85, 653.
- Petersen: Prophylaxis by treatment in the case of V. D., etc. *Ibid.*, 1907, 85, 637.
- Harris: V. D. problems from the public health standpoint. *Ibid.*, 1919, 109, 551.
- Goodman: The Prostitute in Jail. *Ibid.*, 1920, 97, 483.
- Byran: Prevalence of syphilis as indicated by routine use of Wassermann reaction. *Public Health Reports*, 1916, 31, pt. 2, 3230.
- Barringer and Platt: Venereal Clinics in N. Y. C. *Social Hygiene*, 1915, 1, 253.
- Stokes: Inpatient hospitals in control and study of syphilis. *Ibid.*, 1916, 2, 207.
- Weber: Treatment of V. D. in general hospitals in N. Y. State outside of N. Y. City. *Ibid.*, 1917, 3, 97.
- Veldor: Syphilis and Public Health. *Phila.*, 1918.
- Scheuer: Die Syphilis Der Unschuldigen. *Berlin*, 1910.

FORSYTH DAY.

NOVEMBER 21, 1921.

The exercises of Forsyth Day, as previously announced in the JOURNAL, were conducted November 21, 1921, and consisted of clinics and addresses.

The clinics occupied the time from 2 to 4.30 o'clock and subsequently the addresses of Dr. Robert W. Lovett, chairman, and Professors Schloss and Leary were delivered.

The full programme is herewith reproduced:

RESEARCH LABORATORY (1st Floor).

Percy Howe, A.B., D.D.S., Chief; Ruth E. Hatch, B.A., Assistant. Effects of various diets upon calcification and decalcification—effects upon the teeth—the mandible—irregularities of the teeth—symmetrical jaws—joints and leg bones—upon the eye—upon growth and reproduction. Sections of teeth of experimental animals—sections of forming teeth. Specimens showing formation of pulps of human

teeth. Statistics upon dental caries—sections of carious teeth—bacteria of caries. The protozoa of the mouth—salivary analysis.

DENTAL CLINIC, Infirmary (2nd Floor).

Leon B. Willey, D.M.D., Chief of Dental Clinic. Routine work in operative dentistry. Special cases will be shown illustrating same. Cases showing results of work done in clinic of six months' dismissal. *Routine root canal work*—consisting of silver reductions, and 10% and 4% formalin methods.

NOSE, THROAT AND ORAL SURGERY CLINIC, Amphitheatre (1st Floor).

William E. Cheney, A.B., M.D., Chief; Laryngologists: Louis Arkin, M.D., Earle E. Tilton, M.D., A. R. Barrow, M.D., B. F. Murray, M.D., W. C. Funnell, M.D., S. W. Blanchard, M.D.; Leroy M. S. Miner, M.D., D.M.D., Oral Surgeon; William A. Goble, D.M.D., Anaesthetist; H. J. Lester, R.N., Head Nurse; Routine clinic. Operations for removal of adenoids and tonsils. Demonstrating operating and anaesthesia methods. Caring for patient during operation, method of handling and returning patient to the ward, and the after-care until complete recovery from the anaesthesia.

Dr. Isador H. Coriat, Consulting Neuro-Psychiatrist.
Dr. Elmer W. Barron, Chief, Pediatricists: Edward Martin, M.D., Samuel A. Cohen, M.D., Herman Robbins, M.D.

Dr. John Adams, Orthopedist.

NUTRITION CLINIC, Basement Floor (South end).

PREVENTIVE CLINIC.

Herman Robbins, M.D., Follow-up of A. and T. Operation Cases. Samuel A. Cohen, M.D., Under six years of age.

EXTRACTING CLINIC, South Wing (1st Floor).

William A. Goble, D.M.D., Chief Extracting Surgeon. Demonstration of the regular extracting. Clinic routine work, including novocaine, nitrous oxide administration and ethyl chloride.

DENTAL ORTHOPEDIC CLINIC, South Wing (2nd Floor).

E. A. Bogue, M.D., D.D.S., Chief; Moses Eisenberg, D.M.D., Assistant. Expansion of narrow arches for children under six years.

ENDOCRINE CLINIC.

Infirmary (1st Floor—Lecture Hall).

Vincent T. Pollina, D.M.D.

RADIOGRAPHIC AND PHOTOGRAPHIC DEPT.

(Mezzanine over North Wing—2nd Floor.)

Leon B. Willey, D.M.D., Acting Roentgenologist; W. J. Bickford, D.M.D., Assistant. Technique of taking dental radiographs. Radiographs of the lower jaw. Exhibition of dental radiographs, both prints and negatives. Photographs of cases from Dental Orthopedics and Surgical Departments.

DENTAL HYGIENISTS' ALUMNI ASSOCIATION.

Dental Clinic Room—2nd Floor (South Wing).
Dental prophylactic operations by graduate hygienists.

TRAINING SCHOOL FOR DENTAL HYGIENISTS.

South Wing (2nd Floor).

E. M. Quinby, D.M.D., Chief of Clinic; Ethel M. Warren, R.N., Supervisor; C. E. Osgood, D.D.S., Demonstrator. Prophylactic operating in the clinic. Dental Clinic Room (South Wing). Pupils assisting in the Surgical Department and wards.

ORAL HYGIENE DEPARTMENT (Basement).

Dental Hygienist Students. Classes of children will be present showing routine work of instruction and inspection in hygiene. Explanation of the Forsyth "Clean Teeth Button" and the follow-up system for clean teeth.

REGISTRATION AND SOCIAL SERVICE DEPARTMENT, (Basement.)

Routine work of questioning and admitting eligible children; the standard of eligibility will be demonstrated and explained.

DENTAL AND STERILIZING ROOM (Basement).

The routine of cleaning, picking, sorting and sterilizing and assembling sterile tray of dental instruments will be shown. Also the method of sorting and sterilizing broaches, burs, and hand pieces in handling 300 trays per day.

Ten was served by members of the Hygienists' Alumnae Association.

REMARKS BY DR. ROBERT W. LOVETT, CHAIRMAN.

The pleasant duty has been assigned to me as a somewhat recent member of the Board of Trustees to serve as chairman, and I think the duties of the chairman on this occasion should be largely seen and not heard. There will be no long talk from me.

The Forsyth Dental Infirmary has a claim on the interest of the medical profession as well as the dental profession, and also a claim on the attention of the general public because it is doing work along the line of preventive medicine with children. That strikes at the root of matters and as such it is entitled to the interest and support of persons not connected with it, especially as a drive has not been started and a subscription has not been asked. All the institution wants is the moral support of the public and its interest in the hearing today.

There are two phases of the subject: First, why all this is necessary, and secondly, what are we doing?

In presenting the necessity for the work that is being done, we are fortunate in having with us a gentleman who speaks on the subject of nutrition with an authority which is recognized in Europe as well as here.

As a newcomer among us, it is a source of congratulation to this institution that he is making one of his first public appearances, if not his first appearance, in the Forsyth Dental Infirmary. I therefore take great pleasure in introducing Dr. Schloss, Professor of Pediatrics, Harvard University.

POINTS OF RELATIONSHIP OF PEDIATRICS TO DENTISTRY.

By OSCAR M. SCHLOSS, M.D.

At the very outset I wish to express my appreciation for the privilege of addressing you this afternoon. The problems with which this institution is concerned are, to a large degree, similar to those of pediatrics, and I hope to point out briefly my conception of some of these mutual interests.

For some years, due to the advance of dentistry and the awakening of medical men, it has been recognized that these two sciences

can be separated no longer. In dentistry, as in medicine, it has been fully realized that if we are properly to advance, the means must be found to recognize disease and abnormalities at a much earlier stage than we are now capable of. This has been emphasized in a very forceful way by the recent writings of Mackenzie. Indeed, to allow optimism full sway, our desire should be to learn more of the causes of disease and through this knowledge to prevent its occurrence. I have spoken of disease, but what I have said applies equally to abnormalities of structure and growth, which may be of considerable consequence to the individual, and in themselves, by perverting function, may predispose to disease. It is with abnormalities of growth and structure that modern preventive dentistry is largely concerned. Modern pediatrics, also, is tending more and more toward the study and practice of preventive measures, and it is on this basis that the two sciences are on common ground.

From what we know at present it would seem that whatever influence, environment and nutrition have on tissue form and structure, and probably also on the susceptibility of tissues to disease, would be operative, to a large degree, during the period of infancy and childhood. One of the problems with which modern dentistry is actively concerned is the cause of abnormalities in the shape and conformation of the dental arches. It is needless for me to cite the influences of such malformations on the appearance and general health of the individual, or to mention the excellent work which is done for their correction. But as valuable as such work is, I believe that in this institution it is felt that such conditions should be recognized and subjected to proper treatment much earlier than at present. Work of this kind can be done only by the complete coöperation of the dentist and the pediatrician. For example, are any of the malformations of the dental arches of congenital origin, and if so, how many? To obtain information on this subject, it would be necessary to know, first, the shape and form of the arches in normal infants. Two years ago I was surprised to learn that no such data were available, and Dr. Denzer made accurate measurements of the arches of infants from plaster casts, utilizing for this purpose the surveying machine of Dr. Stanton. In order satisfactorily to answer the question as to the occurrence and frequency of congenital malformation of the palate many such determinations should be made. It might prove an important and productive undertaking to follow this work on infants and children of different ages, preferably on the same individual, through a period of years, to determine, if possible, the time at which the malformations were first evident. It would seem that this would perhaps be the first step, and knowing the time

at which these malformations begin, the attempt to find the cause could be concentrated on a definite period. Such work could be the collaborative effort of dentist and pediatrician.

Another phase of the situation concerning both is the effect of nutrition and nutritional disorders on the structure of the jaws. So far as I am aware, little or nothing is known of such a relationship, and if this statement implies dereliction, the fault lies at the door of pediatrics.

If these malformations are found to be mainly acquired, it would seem that an investigation of rickets as a possible causative factor might be productive. Rickets in its milder forms is very common. Although the severer forms are commonest in the poorer classes, milder manifestations of the disease occur in a large number of infants from all classes. I might state, allowing that what I am about to say is based on no accurately determined data, that I do not believe it is an exaggeration to say that some very definite manifestation of the disease is present in at least 50% of breast-fed infants, and in practically 90% of those artificially fed. We know that this disease may affect most of the bony structures of the body, and it would be surprising indeed to find that the jaws escaped. With the softening of bone it would seem quite possible that deformities of the dental arches might result. Having in mind the recent work of Park and Howland in detecting rachitic bone changes by radiography, it would seem possible to develop a satisfactory technic for investigating the structures forming the dental arches, which may, perhaps, throw some light on the problem under discussion. Such work could be done most profitably by collaboration between dentists and pediatricians. It might be possible that disorders of nutrition other than rickets may influence the development of the dental arch.

In recent years, much light has been thrown on the rôle of focal infections of the teeth in causing disease. The recognition of this has been one of the notable achievements of recent years, and has led to the relief of much suffering and probably to the direct saving of lives. I believe, however, that in this institution it is felt that there is involved in this connection with focal infection a very fundamental problem reaching back much further than the decay of teeth and bacterial infection of the dental pulp. Why is it that the teeth of certain individuals are prone to decay or to become infected? It is very doubtful if this susceptibility is due entirely to lack of care. Certain it is that in some individuals caries occurs despite the best dental hygiene. Conversely, in other cases caries may be absent in many instances where the teeth have had poor care. These statements are not made with the idea of minimizing the importance of proper dental

hygiene or repair, but with a full realization of their importance. But it seems to be the general opinion today that if the cause of caries is to be found, it concerns causative factors involving more than lack of care. The same deficiency is encountered when bacterial infection is considered. Painsstaking effort has failed to show that bacteria have any specific causative relation to the process. Very definite contributions to this subject have been made by Dr. Howe of this institution. It would seem that any investigation of the fundamental conditions involved must attempt to approach the problem on the basis of a definite susceptibility to decay. It would seem that this susceptibility may, to some degree, perhaps to a large degree, be involved in the structure and composition of the teeth and in the general problem of nutrition. I believe that the suspicion has dawned on many of us that the nutrition and nutritional disorders of infants and children may be of far-reaching consequence. Certainly it is not beyond the range of possibility that abnormal states in later childhood, adolescence, and perhaps even in adult life, may be the effects of early malnutrition. The structural deficiencies in many tissues as an immediate result of nutritional disorders cannot be questioned, and such tissue deficiencies may quite well be manifested in the teeth. Bearing on this question are clinical observations too striking and of too great frequency to be disregarded. I believe that the quality of the teeth is generally considered by pediatricians as one of the general criteria of the state of nutrition of the individual. It is certainly true that diseases which are known to impair nutrition, such as rickets and syphilis, produce definite changes in tooth structure. There are also certain clinical observations which indicate a relationship between defective teeth and the conditions ordinarily termed malnutrition. In a number of cases it has been observed that infants who had marked malnutrition during the early months of life had primary teeth which were very prone to decay. These teeth were in the process of development at the time the nutritional disorder was active, and it seems probable that the defective teeth were a direct result. In many such infants recovery from the malnutrition occurs at an early age, and the second teeth are of normal quality with no abnormal tendency to decay.

Further observations of the same significance concern the second teeth. Infants who were well nourished during their early months had first teeth which were perfectly normal. Severe malnutrition occurring after this time was followed by the eruption of second teeth which were imperfect and prone to early decay. Such observations indicate that in some cases, at least, the growing teeth are influenced by the general nutrition of the individual. It would

seem, therefore, of great importance to preventive dentistry and to preventive pediatrics, to have a systematic study of the nutritional disorders of infants and children, with the view of ascertaining any influence on the structure of teeth and their susceptibility to disease.

Since the teeth are composed largely of inorganic salts, it would seem that a study of the metabolism of these substances and the various factors influencing their absorption and utilization may be a profitable field.

Another problem of interest, mainly speculative it is true, is, are there any special defects in nutrition which may have a specific influence on the quality of the teeth? Are the accessory food elements or vitamins of influence in proper development of the teeth? It is known that at least one gland of internal secretion may cause definite changes in the teeth and dental arches. Tempting as these subjects are for discussion, such discussion at present would savor too strongly of speculation to be profitable.

Thus far, only the influences of environment and nutrition have been considered, but there is a still broader, though more difficult field--the influence of the food intake and nutrition of the pregnant woman on her child. This is a subject about which practically nothing is known. Granting that defects in nutrition of the mother may be of influence on the unborn child, it seems not improbable that such influence may bear on the teeth. What this difficult field has to offer to the investigator is difficult even to conjecture. From a clinical and statistical standpoint, however, it would be possible to study carefully the diet and nutrition of large groups of women and their infants. In a similar manner, any indication of hereditary influences on the teeth might be found.

In this brief and rather optimistic discussion I have mentioned problems which are of direct interest to this institution and which are being investigated here at the present time. My justification for considering these subjects is to indicate that they are not dental problems alone, but concern pediatrics to almost as large a degree. Assuming the correctness of this view, the Forsyth Dental Infirmary has a very direct interest in pediatrics, and the reverse is equally true. If I have succeeded in conveying this impression I have expressed all that I hoped to this afternoon.

DR. LOVETT: The second part of the subject of the afternoon is concerned with the practical carrying out of the theoretical requirements. From the beginning, the Forsyth Infirmary has had the services of a loyal and devoted servant as a member of the Board of Trustees. No one has more thoroughly or more adequately represented the institution to the public. No one

has been more successful in its success or progress. I have the pleasure of introducing Dr. Timothy Leary, Trustee, Forsyth Dental Infirmary.

THE WORK OF THE FORSYTH DENTAL INFIRMARY.

BY TIMOTHY LEARY, M.D.

I AM honored by the assignment which has been made to me this afternoon to tell you something of what the Dental Infirmary has done, and perhaps it would be worth while to review the history of the institution before indicating what it has done. This institution had its inception through the suggestion of Dr. Edward V. Brannigan, one of the first trustees, who was professor of clinical dentistry at Tufts College Dental School. Dr. Brannigan was enabled to get a group of thirty children, coming not from the best families but from families broken up by the law or which had been left alone by death—children who were not getting particular care. These were used as examples of what might be accomplished—perfect mouths with a close approach to perfect bodies. He thought that this work could be carried on and safely applied to the community at large. He interested in this work his assistant, Dr. Ervin Johnson, who had as a patient Mr. James Bennett Forsyth, founder of the Forsyth Dental Infirmary, who was the pioneer in incorporating rubber and fabric, which two elements are compounded and made use of.

Mr. Forsyth died before he actually incorporated in his will a large sum of money for the purpose of founding such an institution as this; but his brothers, instead of quarreling over his funds, decided that not only would the funds he had left be applied for the purpose, but that also their own fortunes would be put into the making perfect of such an institution as he had dreamed of—a monument to the family, but notably to the living representative who has given not only his money, but his heart and soul to this work, Mr. Thomas Alexander Forsyth.

The problem of the trustees was largely a pioneer one, there was nothing to start with. I am not going into the construction of this building. We attempted to build a modern hospital building. Even after a generation there are incorporated into this building at least twenty possibilities, which was declared to be impossible by builders who had to do with the construction of the building. However, the building speaks for itself.

More important than the building is the work which has been done in it. Early in the work it was made apparent that the function of this institution should be largely one of prophylaxis. The dental clinics in the city were tackling the dental problem, but they were not particularly interested in the children, because

the problems of such from a dental standpoint are simple. They wanted to teach students who had to do with the mouths of adults. So the children succeeded in making only a small dent in the dental problem as presented here. We saw that our early work would have to be largely reparative.

The trustees made claim in the very early days that the ultimate purpose of this institution should be to deal with the prophylaxis, and that this purpose has been in part satisfied is indicated by the very marked drop in the average age of the children who are coming to this institution. The children who came first averaged 14 years. The children who come today for the work of this institution average $6\frac{1}{2}$ years of age, and it is our hope that this will drop further.

Particular attention has been given to the six-year molars—teeth which most readily decay and whose loss means faulty alignment of the teeth as the permanent teeth erupt. We are proud of the statement which Dr. Cross makes to me,—that the children in the Boston schools have had their six-year molars protected and practically retained up to children who are 12 years of age in the sixth grade. There could not be much better prophylaxis in the honest development of the teeth and the mouth as a whole.

I want to say a word of the correlated work in prophylaxis which has to do with adenoids and tonsils. Tonsil and adenoid work in the average hospital means the sort of routine which comes in wholesale numbers, and the chiefs of the clinics physically cannot give the time to look over these children, and it is true that this work is largely assigned to house officers who are not experienced, and it is therefore very imperfectly done. We were fortunate in having in Dr. Chenery a man who was willing to sacrifice a good deal of his time and had trained men to give their time to this work. There have been about five thousand children operated on for tonsils and adenoids in the last six years, and Dr. Chenery tells me that today arrangements are made for the removal of tonsils and adenoids in children at the rate of 1500 a year.

I need not talk of the importance of the care of the teeth together with the care of the tonsils and adenoids as the keynote in prophylaxis. The work done on focal infection has opened up work in the way of prophylaxis.

Frankly, I was becoming pretty hopeless of medicine and chronic diseases; medicine in its more recent developments. The progress which has been made in the last ten or fifteen years has been very small. Statistics show that most of the chronic diseases are progressing rapidly. On the other hand, we are accomplishing very much from a health standpoint, in the care of these children.

As a matter of fact, the progressive increase in disorders of the heart is rather disturbing. This was considered at the last annual meeting of the medical society. It is estimated that 50% of the cases are established in a child 16 years of age.

We had the opportunity to autopsy a number of dogs which were brought into the institution. On examination, these animals, on account of their environment, were found to be suffering from human disorders. The dog has a high resistance to caries. The dog has tonsils which are very small. Hence no evidence of tonsillitis was found among those examined.

This brings us to Dr. Howe's work. He succeeded in demonstrating that the root canal of the tooth instead of being single is multiple. Dr. Howe was the first human being to demonstrate that animals fed on a diet lacking in certain vitamins, were particularly prone to infection.

Children who are not breast fed are occasionally fed on condensed milk; and frequently it is necessary for the child to depend on milk which has been powdered. This milk is expensive and difficult to obtain. In the powdering, the milk is exposed to the air, this being used as a drying agent; and as a matter of fact, milk as it comes from the cow may frequently be absolutely without the vitamin element. Children, however, may get along apparently comfortably on such diet, as the English reports indicate, but the English reports have not gone into the possibility of infection. Feeding such milk, no doubt, will lead to a high percentage of infection and to the danger of other results. Demonstrations have been made showing that teeth and bone fully and normally formed, may suffer decalcification as the result of the diet lacking in certain vitamins.

We started in with our Orthodontia Clinic, expecting that there would be turned out a tremendous amount of work, and we obtained the assistance of learned specialists in this branch. We established schools of orthodontia and when we got through we found that we had made not the slightest advance. Now we are attacking this problem from a different standpoint. We have stepped upward from the reparative type of orthodontia and are making measurements of the width of the arch in children, and the child who comes to us with an arch less than the minimum is having that arch dilated to proper size. While we do not anticipate that this will prevent all orthodontia work, it will result in providing sufficient room into which the teeth may erupt with a very much greater degree of regularity than would otherwise be possible. Finally, a work rather interesting in connection with our work is orthopedics. We have children come in large numbers from all walks of life. They come to us in the plastic

stage. We discover in these children, often, spinal curvatures difficult to handle in adolescents and often impossible in adults.

Next, a word about the educational function of the institution. We have recognized the importance of this institution as a center of education for the child who is taught to take care of his teeth. He is going to develop hand in hand with the use of the tooth-brush, the practice of personal hygiene in other matters. We have recognized the duty of this institution to train and educate more than for the practice of dental hygiene. The purpose of this institution is to train women to care for the mouth properly and to educate them so that they can teach mouth hygiene and personal hygiene to the world at large. Also for the training of dentists.

This institution has been a model for the establishment of the institution at Rochester, New York. It is rather interesting to see how a little thing may widen into a big thing. The Dental Infirmary at Rochester, New York, established by George Eastman, has done so much in a progressive way that Eastman's millions, which are almost immeasurable, are now being diverted to the establishment of a medical center, to be, perhaps, one of the greatest in the world, the nucleus which started it being the Rochester Dental Infirmary.

Chicago is trying hard and hoping to produce, some day, a similar institution. That, in general, is the story of the Forsyth Dental Infirmary for Children.

The most remarkable thing today is this: It was intended to be an institution for the children, and the children have adopted it in a very remarkable fashion. They come here to a place which is theirs; where they are looked after; they submit to all sorts of examinations when frequently a protest is raised if a suggestion is made that they undergo similar examination in the school. I look upon this adoption of the institution by the children as the highest compliment that could be paid to it.

DURING the week ending November 26, 1921, the number of deaths reported was 212 against 187 last year, with a rate of 14.59. There were 32 deaths under one year of age against 29 last year.

The number of cases of principal reportable diseases were: Diphtheria, 79; scarlet fever, 17; measles, 51; tuberculosis, 39.

Included in the above were the following cases of non-residents: Diphtheria, 7; scarlet fever, 3; measles, 5; tuberculosis, 8.

Total deaths from these diseases were: Diphtheria, 4; scarlet fever, 1; measles, 1; tuberculosis, 15.

Included in the above were the following cases of non-residents: Tuberculosis, 2;

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THE VISITING CONFRERE.

ADOLPH LORENZ, of Vienna, is an orthopedic surgeon nearly seventy years old, who was in his time a distinguished contributor to the progress of surgery in formulating an operation for the reduction of congenital dislocation of the hip without incision. Summoned to this country some eighteen years ago, to operate on a well-known patient, he was taken up by the leading members of the medical profession, shown every honor, given every facility to demonstrate his methods, and called into consultation much in lucrative private practice. He taught much to the profession in using his method in reducing hips, he showed that insufficient force had been used, and he left the country with a medical profession feeling grateful for his instruction, although perhaps deprecating his desire for and methods of obtaining newspaper publicity.

But much water runs under the bridge in eighteen years. This method of reducing hips has been so largely modified here and in Europe in favor of using gentler and more dexterous manipulation that one would hardly recognize the original operation. In an analysis of the cases operated on by him in America, Ridlon,¹ a surgeon in Chicago, stated that out of twenty-six dislocated hips operated

on by him, only two had been successfully reduced. The advocacy of so-called "bloodless" methods in other deformities and joint disease has, moreover, not gained ground as it has been recognized that with modern surgical technique, better functional results are often obtained by division of resisting structures than by rough tearing of the soft parts.

The medical profession is therefore asking in many quarters what Lorenz has today to teach the profession, or offer to the patient that is of such great value, and why he is here. If we may believe our best information, the condition of the Austrian children is deplorable, and they are in urgent need of orthopedic treatment. If, when our influenza epidemic in Boston was at its height, one of our prominent physicians had gone to Chicago where there were few cases at the time, and announced in the papers that he had gone there because he loved Chicago so much, the public of Chicago might properly have wondered why he had come. A disagreeable answer to a similar question with regard to Lorenz is suggested by a paragraph in a New York paper,² where one of the surgeons, apparently in charge of Lorenz's publicity department, stated that no charge would be made to patients for professional services, but that each patient might leave what compensation he could afford, which was the custom in Vienna.

Any criticism of Lorenz by the American medical profession would be interpreted by the laity as inspired by jealousy. The medical profession is perhaps no more immune to that sentiment than any other, but in this instance the laity may be well assured that Lorenz, neither by reputation nor achievement, is in a position to actuate that sentiment in a profession that has passed him by in the march of progress.

REFERENCES.

- ¹ Ridlon: Jour. A. M. A., April 16 and 23 1904.
² New York Times: Thursday, Nov. 26, 1921.

THE ANTI-VIVISECTION PROPAGANDA.

For many years intelligent and sympathetic people have shown a growing interest in matters which safeguard the health of individuals and communities. The growing efficiency of medicine has led to demonstrations of practical appreciation, through generous gifts to medical schools, hospitals and research organizations. Business and civic organizations are coming to understand the financial importance of diminished mortality and morbidity, so that on some occasions when a question of disease prevention or some other plan for the betterment of human life is in question laymen and non-professional organizations are exerting influences in favor of well-established proceed-

ures. But, aside from a few notable exceptions, laymen have been reluctant to enter the arena when active controversy relating to medical progress brings one into public notice or offers the opportunity for bitter denunciation by ungenerous opponents.

Fortunately for the general public, the attitude of influential men in these later days is changing more rapidly and we now see a desire by some to enroll under the banner of an apostle who has dedicated himself to a crusade in the interest of human beings and the lower animals.

The demonstration of this spirit is shown in a circular letter reading as follows:

"It has suddenly become apparent that the activities of the various anti-vivisection societies have finally reached a strength where they are able to menace effectively the health and welfare of the American people. On a referendum vote, they threatened all animal experimentation in California last year. The bill was only defeated by the expenditure of great energy and large sums of money. The danger now has come to Massachusetts and an interstate convention of the anti-vivisection societies is to be held in Boston the last of this month. We have constituted ourselves a committee to undertake a campaign of sane, humane education to combat the propaganda of those who seek to prevent the making of vaccines and antitoxins, the testing of such drugs as ergot, etc. We are not asking for large contributions, but a check to help this work will be carefully expended in the best interests of our people.

(Signed)

CHARLES W. ELIOT.
RICHARD P. STRONG.
ERNEST HAROLD BAYNES.
JOHN C. PHILLIPS.
EDWARD WIGGLESWORTH.
TOWNSEND W. THORNDIKE.
THOMAS BARBOUR.

November 23, 1921."

The names of the men composing this committee give a guaranty of careful, intelligent and even scientific analysis of the questions involved. These men are not given to emotional outbursts, nor ill-considered conclusions, and should convince the public that properly conducted animal experimentation is wholly in the interest of the people. The most virulent critic cannot fairly contend that these men are prejudiced, for the history of the life of each of this group is a recital of service to humanity.

Physicians have been unable in the past to convince many kind-hearted opponents of vivisection, of the honesty and humanity of those who are engaged in teaching or research work, because of the popular misconception of

the effect on the human mind of association with suffering. The mere fact that physicians exhibit controlled sympathy has been often interpreted as evidence of callous indifference. All of the mistaken ideas and hysterical arguments must now be met with full and logical explanation.

Through his influence on those under his supervision, the family physician may be able to lead many to a sane attitude on this question. The argument presented to a person unfamiliar with some of the abstruse questions of physiology should be restricted to patent facts. Most people recognize the danger of diphtheria, and the great advances brought about in dealing with this disease through the use of animals would, if understood, lead many to feel that the sacrifice of guinea pigs and the minor suffering of horses is a small price to pay for the preservation of the lives of many children.

The contest is on. The opponents of vivisection are organized, aggressive and even fanatical. The battle must be waged among the people, and physicians must be in the trenches and on the firing line.

We cannot be too grateful to Mr. Ernest Harold Baynes, for the courage and devotion displayed, and to the other men on this committee, but their efforts must be sustained and augmented by the family doctor. A legislative committee hearing is a poor place in which to mold public opinion. Legislators should know the wishes of their constituents. Knowledge must be imparted by judicious explanation. If 25 per cent. of the physicians of this state will seriously assume the responsibility of conducting a campaign of education, there will be no danger of destructive legislation.

DR. GRENFELL'S WORK.

Hospital Ship *Strathcona*, Labrador Coast.

September 15th, 1921.

My Editor:—

During the past thirty open seasons, navigating an almost uncharted coast, I have as master of my vessel spent much of my available time in making charts. My chart case is full of "records." People often ask why one does not publish them. The answer is that another man solving the problems of navigation on such a difficult coast might lose everything if my observations were not correct. A friend has just remarked "you mean that you don't publish them for fear someone else might go by them." They are on loan, on the reservation that the borrower assumes the responsibility of acting on them. So being but a peripatetic scientist, I have always hesitated before accepting invitations to write on things medical or surgical.

One of our life-long regrets has been that we never could afford to keep a purely scientific pathologist even for twelve months. For here aetiology has the enormous advantage of being uncomplicated by those many mixed possible causes, that add so greatly to the difficulty of the Sherlock Holmeses of the profession, whose business is to unravel the causes of its mysteries. The following will serve as an illustration.

Three years ago there were living in Nepartok Bay in North Labrador just two white families, a few hundred yards apart. The bay lies to the northward of a lofty range of mountains called the Kaumajets, and is twenty miles long from the islands at the mouth. The nearest neighbours on the south were the Eskimo at Okkak, a village of three hundred people. It is fully thirty miles distant, is on an island, and is isolated by high mountains. To the west and east the nearest neighbours are in Hudson Bay and Scotland; to the north the nearest were the Eskimo of Hebron—over twenty miles away as the crow flies, and again with high hills and four arms of the sea intervening. No communication with anyone outside their bay had taken place for many weeks. The sea ice had been unsafe, and the two families, Metcalfe and Lush, had been occupied in sealing. At the time of which I write there were four adults, all women, and three children, in the Lush house. The father was away on the outside at his seal fishery. In the Metcalfe home there were two adults and five children, a widow named Winters and her baby being included. On Sunday, November 10th, ten Eskimo arrived at the Metcalfe house from Okkak. Eight of them were adults. They had travelled over the mountains for two days, and when they arrived they were all sick and weak, and all lay down immediately, as only one man of their number could walk. They told Mr. Metcalfe, who welcomed them all to the shelter of his hospitable roof, that a bad sickness had fallen upon their village, and that they had come away to escape it. They never came out of his house again. They never visited the Lush's house. There was then no sickness to the north. Next morning all the visitors were seriously ill. On Friday the 15th, one Eskimo woman died. On the 17th two more people died, one Eskimo and Mrs. Metcalfe. On that day, Sunday, Mr. Metcalfe looked in at the Lush's door and said that his wife was dead, but not to try and come and bury her—he would sleep on the floor. On Tuesday morning he lay dead on the floor. The same day six Eskimo died. On the 23rd the rest of the Eskimo died. The three living Metcalfe children, and Mrs. Winters and her baby were now stripped of all clothing, which was left on the house, and they went over to an outhouse into which Mrs. Lush put a stove. After fourteen more days she took the three Metcalfe children to her home and looked after them. They had been sick and were getting better. The dead lay in the house all winter with no one touching them, but in the spring eight Eskimo came, men who had had the "sickness," and let a corner of the building fall down on the bodies. In the village of Okkak only sixty were left alive. Every single male adult had died.

There were several other such unusual cases where all the male adults in a house died. Six grown white men died in an isolated house at North River in Sandwich Bay. One child was found alone in a house alive with the frozen bodies of all the adults, after a month of isolation.

The same facility for isolating possible channels of infection, of possible sources of disease, exists all the time. We have no one to devote especially to the study of pathology.

The main troubles of the Coast are naturally those of dietetics. With the ground hidden in snow and ice for over six months of the twelve, the access to fresh vegetable food is naturally difficult, and the occupation of the bread-winners being fishing and hunting, feasts and famines are liable to alternate whenever poor housekeeping and lack of thrift exist. Each September the summer occupation comes to an end, and like the squirrels the wise lay in all the stocks of food they can. The country supplies them with a generous variety, but once navigation closes

in November the more isolated will have little chance of purchasing more food till the following July; and even those able to reach the fur-trading posts will get but few vegetables and no fruit. Beri-beri is therefore a not uncommon experience, and is complicated sometimes with true scurbutus. Fortunately the cure for scurvy, which has been known so many years, involves more or less the relief of the unrecognized sickness, for in using the spruce tips, and any leaves or berries available from the forests or marshes, a certain vitamin value is also obtained. The recent shortage of sugar oddly enough helped in the cure of beri-beri also, for the red cranberry and the blue hertzberry can be preserved without sugar (which those who need a better diet cannot afford) in water or by freezing. Thus in the very cases where raw fruit was most needed they were usually preserved uncooked, and could be thawed out and eaten raw.

My first year's cruise on the Coast convinced me that the rôle of the doctor in this country afforded opportunity for a wide range of practice and activity. One discovered very early that if the object of one's efforts was to preserve a healthy community and to relieve the general woes of humanity in one's territory, neither the pill nor the knife would satisfy a true Aesculapian. Thus today we discharged from the hospital at Indian Harbour a "female patient" who had come in because her baby at the age of two months weighed five pounds, and she herself had lost her knee jerks, and had "feelings like cold water trickling round under my skin." Underweight, anaemic, listless and feeble when she entered, she was now to return some fifty miles to a lonely part of the coast, where three other children awaited her, and practically nothing but dry flour and fish for a diet. It is now well on in September, and her husband has done poorly with salmon, which commodity today anyhow is worth less than codfish. Meanwhile food here is still at war prices—flour being eighteen dollars a barrel. The total cost of the treatment of the patient had been not less than fifty dollars to us, probably nearer a hundred. Both mother and baby were now "well"—yet far from cured. Were the functions of the doctor to end with the discharge, without question he would be missing quite as great an opportunity of rendering valuable service as if his patient was leaving with a bleeding vessel untied.

One of the great attractions of our profession in all "general practices" is the infinite variety of opportunities it forces one to see lie open—opportunities which so often pass unnoticed, as do the real causes of so many afflictions that bring patients to us for help in the mixed environment of modern city life. Here on the Coast there is simply no escaping the conviction that the true physician absolutely must deal with the moral, mental and spiritual aspects of the life of his patient, if he is to heal the body. Also he discovers that there is no cant in saying that the good physician deals with soul as well as with body; and that no physician can be really good unless he does. Even if he is classed as "superior" he is losing otherwise unquestionable opportunities to make permanent the temporary services he renders to a temporary structure that depends for existence on metabolism.

On my chartroom table lies Dr. Bandler's new book on the Endocrines. There are some who would regard this work much in the light of a chapter from one of the old Prophets. He tells us how he has cured sterility neither by dilating the cervix uteri or Fallopian tube, but by the administration of these new elusive substances, which control not only every function of the purely material mechanism called our bodies, but criminality, morality and sanity. There seems no reason to doubt but that we are on the verge of much new knowledge, and that once again

we need have no fear that asepis and anaesthesia mark the last lap to be gained in the race between human knowledge and disease, as some of our pessimists have felt convinced. The experience of the ages should have prevented our ever questioning this fact. Men of our profession who have committed themselves publicly to mechanistic theories of life are doubtless as much responsible for the existence of Christian Science as Mrs. Mary Glover Baker Eddy.

Out of this same little hospital at Indian Harbour today went a strapping sailor man. He had had an organic stricture of the urethra. He had been on a fishing schooner, hundreds of miles from help, and his urinary bladder had burst, leaving his urine to pass through a sloughing wound in his perineum. The deductions for which I was apologizing just now did not suggest a faith cure or absent treatment. The knife and the catheter were the helpmates relied on, and the man is well. Ought a surgeon—the very word so unfortunately suggestive of a ministry limited to mechanics—to hesitate because it may be looked upon as an advertisement to accept a great opportunity, probably exclusively his at such a time, to help that man infinitely more permanently than by merely closing a fistula.

Yet because a certain surgeon already acquiring world fame had ventured to publicly proclaim his attitude to this ever recurring problem, I, at that time a young doctor looking for guidance at the outset of life, heard his colleagues on the staff of our great hospital stigmatize him as a self advertiser. So the question of the multiplicity of causes that culminate in results affects us as well as those whom we undertake to serve. On this Coast I think the answer is perhaps easier, and the more ready analysis of cause and effect at least favours clearness in our vision, if not always affording courage to our eldons.

Things have greatly changed since my college days in England with regard to all this. The recognition of the physicist and chemist that the definition of matter is impossible, that the atom or corpuscle might almost as truly be said to be composed of nothing whirling round as of "something" whirling, and indeed to be only existing at all because of the whirling round, that there may be no such thing as matter after all, at least leads us optimists to believe that we have the right to stick to our contention that no one has yet grasped the whole of science, and indeed that science must ever be "current," until that which is perfect replaces the unsatisfactory attainments of today.

Fear may be the cause of faith; but even if so, to some of us it is now intelligibly unavoidable on a mechanistic basis. For we are told by some that fear is but the result of yet another endocrine; and for the comfort of any section of our mind that fears self deception in believing life to be a joyous venture rather than a tragic drama, we can reduce even religion to quite as material a basis as the atom.

The birth of the College of Surgeons of America was not without labor and travail, but it has splendidly emphasized not only the immense opportunity and responsibility of the pure surgeon and the absolute need for him in the world, but also the infinite importance of the family physician. Difficult as has been its first objective, namely, to fight in the interests of the truth the vampire charlatan and to protect his credulous and ignorant victim, it has fearlessly placed its fiat on those great services which the general practitioner can render to the "knife" itself. Personally, when my own life comes to hang on the lips of a man of medicine, I trust he may be a man of pure science, but to satisfy my reason he must also be a man of infinite faith.

WILFRED T. GREENFELD, M.D., F.R.C.S.

The Massachusetts Medical Society

REPORT OF MEETING OF GROUP V.

A JOINT meeting of the Barnstable, Bristol North, Bristol South and Plymouth District Medical Societies was held on Thursday, November 10, at the Lakeville State Sanatorium, by invitation of Dr. Sumner Coolidge, President of the Bristol North District Society and Superintendent of the Sanatorium.

About eighty physicians were in attendance, coming from the various towns in the southeastern part of the Commonwealth.

After an excellent dinner, provided by Dr. Coolidge from the products of the Sanatorium farm, the formal exercises of the meeting were carried out in the chapel of the institution.

Dr. John W. Bartol, as the President of the Massachusetts Medical Society, spoke of the duty and the power of physicians in influencing the Legislature in matters pertaining to the public health.

In recognition of "Cancer Week," Dr. Edward Reynolds had been asked to speak on "Cancer," which he did with emphasis and precision. Approval of the continuance of joint meetings of the various district societies, a plan originated by Dr. Alfred Worcester, was voiced by Dr. Walter P. Bowers, who expressed, also, the plans and hopes of the JOURNAL as now conducted.

Dr. Sumner Remick, representing the Division of Tuberculosis, Massachusetts Department of Public Health, urged the recognition, to a greater degree, of the consultation clinics in tuberculosis, held in the various towns, on stated days. He offered the cordial coöperation of the Department of Public Health, particularly with reference to the control of tuberculosis.

Dr. Channing Frothingham spoke interestingly of his investigation of osteopathy and chiropractic.

The last address of the afternoon was delivered by Hon. B. Loring Young, Speaker of the House of Representatives. He evidenced a sympathetic understanding of the various medical matters requiring action by the Legislature, and spoke in detail upon the subject of Maternity Aid Legislation.

By vote of the meeting, President Coolidge was empowered to appoint a committee of four to arrange for future joint meetings.

Dr. P. E. Truesdale, of Fall River, expressed the gratitude of the fellows present for the hospitality of Dr. Coolidge, and the appreciation of the addresses of the several speakers.

ARTHUR R. CRANDELL, M.D.

NOTES FROM DISTRICT SOCIETIES.

WORCESTER DISTRICT MEDICAL SOCIETY.—At the regular Clinical Meeting of the Staff of Memorial Hospital held November 25, 1921, Dr. Charles E. Ayres reported a case of a child seven years old with tuberculosis of the seventh cervical vertebra. There was destruction of the vertebra and collapse of the cord, causing paralysis of both upper and lower limbs. The case had been treated on the Bradford frame, which relieved the paralysis, and later with the Albee operation. The patient was shown wearing supporting collar with the use of arms and legs.

Dr. Charles A. Sparrow showed x-ray pictures and electrocardiograms of a case of pericarditis with effusion. The case gave a history of tonsillitis with chorea and endocarditis. Improvement followed treatment and the patient is now comfortable.

Dr. George A. Dix reported a case of sporotrichosis contracted by the patient while working on a cattle ship during the war. Diagnosis was made by culture. The patient is now better and continues to improve while under treatment with potassium iodide.

Dr. Lester C. Miller reported a case of Addison's disease with apparent cure. The patient was a young white woman with an intense bronzing of the skin. The case was probably not tubercular but due to some sort of infection. An exhaustive report of the history was given with a résumé of the literature on the subject. The case was treated with potassium iodide and adrenal gland.

Correspondence.

THE MASSACHUSETTS CIVIC LEAGUE vs. THE MASSACHUSETTS CIVIC ALLIANCE.

To the Editor of the BOSTON MEDICAL AND SURGICAL JOURNAL,
Sir:—

Is it possible that when you give such an amount of space to the incursions of the Massachusetts Civic Alliance you confuse it, as so many do, with the Massachusetts Civic League, with which it has no affiliation whatever?

Numerous organizations, including two chambers of commerce, have since 1916 attempted to learn something of the Alliance, but thus far with very moderate success.

Its headquarters seem to consist of a desk in an office with several other organizations. No investigator has found any one at the desk, the occupants of other desks in the same room have been uncommunicative, there seems to be no telephone connection either here or at the home of its secretaries, and searchers for information have been completely baffled.

The Massachusetts Civic League, whatever opinion it might hold, would never have written to the President of the United States the impudent letter which appears on page 637 of the November 24 issue, and it is to emphasize that fact that I feel impelled to write to you today.

SAMUEL B. WOODWARD.

AN EARLY SYSTEM OF VENTILATION

November 18, 1921.

Mr. Editor:—

There is nothing new under the sun, although conditions may change. As long ago as 1886, my father-in-law, Benjamin Meriam, got out a patent on a system of ventilation patterned on the principle of the monitor roof, referred to in the article by Dr. Griffin, appearing in your November 10 issue. It was a successful operation in school and library buildings of the city and is doing good service in the house built and formerly occupied by the writer, in West Roxbury. All that was done was at his own expense, however, and owing to circumstances it could go no farther.

The system is simple and economical and is applicable to any type of building, only requiring a moderate amount of heat to direct the current toward the outlet, through which there can be no down draft.

The working plans can be seen by appointment if so desired.

Yours truly,

C. W. SPARHAWK, M.D., Middleton, Mass.

PROFITTEERING IN ALCOHOL.

November 10, 1921.

Mr. Editor:—

In regard to profiteering of physicians and surgeons prescribing alcoholic liquors: physicians receive 400 prescription blanks per year; if he is entirely mercenary he may receive in return the maximum amount of \$800. Considering the amount of bookkeeping, etc., he expends a like amount in time and energy in reporting same.

In regard to emergency prescriptions he must explain in person before revenue board or person representing same, the reason for an emergency prescription.

Above is an explanation as to the impossibility of physicians or surgeons having any monetary consideration.

Fraternaly,

JAMES F. QUEST, M.D., Boston, Mass.

NOTICES.

BOSTON CITY HOSPITAL.—Staff Clinical Meeting. Cheever Surgical Amphitheatre, Friday, December 9, 1921, at 8 o'clock P.M.

Topics: Some of the More Common Tropical Diseases Seen in Boston and Vicinity. (35 minutes.) Richard P. Strong, M.D. Observations on Tropical Diseases at the Boston City Hospital Covering a Period of Six Months. (35 minutes.) George C. Shattuck, M.D. Open Discussion.

Physicians and medical students invited.

H. ARCHIBALD NISSEK, M.D.,
HAILEY B. LODGE, M.D., Committee.

HARVARD MEDICAL SCHOOL RESEARCH CLUB.—The meeting of the Research Club to be held at the Harvard Medical School, Amphitheatre in Building A, at 12.30 o'clock on Friday, December 9, will be addressed by:

Dr. Chester M. Jones: "Bile Pigment Studies."

Dr. James H. Means: "Metabolism Curves in Various Types of Myxedema. Effect of Thyroid Feeding on Metabolism."

Dr. Paul D. White: "Electrocardiograms in Myxedema."

Dr. George R. Minot: "The Anemia of Myxedema. Relation of Polycythemia to Leukemia."

Dr. Francis R. Rackemann: "The Mechanism of Hay Fever."

Each of the above talks will be of ten minutes duration.

A CLINICAL MEETING with demonstrations will be held in the Amphitheatre of the Children's Hospital on Friday, December 9 at 4.30 P.M.